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of Retardation and Deviation

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Retardation and deviation *would not attract much interest simply as abnormal conditions. It is their curative treatment—the processes through which the abnormal may be made to develop into the normal—that inspires the present efforts of educator, psychologist, and physician.*

The Science *which treats of the restoration of the retardate and the deviate to normality has been in want of a name.*

The Psychological Clinic *proposes for this science the name* **ORTHOGENICS,** *and will employ this term to define the journal's scope and object.*

While **Orthogenics** *concerns itself primarily with the causes and treatment of retardation and deviation, it is by definition the* **science of normal development,** *and comprehends within its scope all the conditions which facilitate, conserve, or obstruct the normal development of mind and body.*

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THE VITALITY OF TEACHING.[1]

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A few years ago I asked three of my critic teachers to select from a senior class of seventy-six teachers the best twenty-five teachers and the poorest twenty-five. Then out of each twenty-five so selected, I asked them to select the best ten and the poorest ten. When these lists were in hand, I asked my critic teachers to make a study of these fifty selected teachers and to report, after due study of each teacher, on the following questions:

1. Is discipline an evident problem, and is this end secured through tight rein or through interest?

2. Do the students work, and is the work imposed or does it seem to suit the child's own impulses?

3. What direct memory work is done, and is the memory end reached through formal drill or through use?

4. Is the subject matter organized and handled from the adult point of view or from the child's point of view?

5. Does the teacher seem to spend the class hour with subject matter or with students?

6. Is the subject matter handled as book records or as experience?

When each critic teacher had submitted her report for each of the teachers (grade teachers), I undertook to compile the reports for the purpose of discovering whether or not I could find any fundamental conceptions or laws on which the decisions could be directly or indirectly based. I found two, and only two, such laws; and neither of these was a conscious guide in the judgment of any of the critic teachers. These two laws may be stated as follows:

I. The highest success is found in those teachers who work from the child's standpoint; and the poorest success comes from teachers who work from the logical or adult standpoint.

[1]Read at meeting of Heads of Departments of Education of the Middle Northwest, held at Lincoln, Nebraska, Dec. 19–21, 1912.

II. The poorer the teaching the more the work is imposed; and the better the teaching the more the work seems to satisfy the child's own impulses.

Now I am offering this to you as mere human opinion, even though it is the combined opinion of three skilled critic teachers. I have been studying and analyzing these data for three years, and I have arrived at a number of conclusions which I am now ready to offer you:

1. The nearer we come to a science of teaching, the more and more clear it becomes that the child has a manifold of feeling, impulse, instinct, that constitutes the real moving power in all education.

2. We have been spending most of our time in studying and organizing subject matter so that the child can "take it in;" and our technical speech is to-day full of such betraying terms as "grasping," "comprehending," "absorbing," "inculcating," "implanting," "giving," etc. Our view of the educational field has been largely from the standpoint of what we have to give. Thus we have paid much attention to subject matter, and we have looked upon subject matter as a kind of social inheritance that the child is to receive, willingly or unwillingly.

But as we come nearer to a science of education we find the child bristling with little impelling forces that work in their own way, and we now come to admit that these impelling forces refuse to hold our social inheritance sacred. Our subject matter, our course of study, which represents a selection seemingly of the most valuable experiences of the race, from the adult point of view, is not taken seriously by the child; and while we offer it to him as a carefully arranged logical whole, he breaks it as a mere plaything and takes to himself only the little attractive particles here and there that meet his favor. This suggests what I am ready to call the Teaching Comedy: here stands the teacher anxious to give to every child the richest gift that can be bequeathed to any human being, namely, the most valuable experiences of the race, and no child is willing to become so wealthy!

3. I believe it is time that we had grown a bit ashamed of the Herbartian word "interest," since it is a word hardly dynamic enough to express our teaching prowess to-day. We have found a new term that is a little more powerful than the word "interest," meaning indeed that we propose to control interest; and this new word, big with educational promise, is our word, *motivation*. Told briefly, the big word in education to-day is motivation.

Now our new word indicates that interest is no longer a final

term, but that we have found the mass of rootlets that nourish and grow and determine interest; and the big problem of education to-day is (1) the identification and naming of each of these determinants of interest, and (2) the development of a technique of handling these determinants so that we can lead interest where we will. Here is the most vital process in all schoolcraft, for the reason that only through it can we touch the life of the student; and motivation must not be looked upon as a mere process of winning the student, as I fear some have already conceived it, but as our means of calling out initiative, personality, self-expression. Motivation means laying hands on the deep-seated springs of action, to the end of controlling conduct.

What are the Determinants of Interest?

We have known for some years that the squirrel is interested in the nut but not in the earthworm. We have known that the robin is interested in the earthworm but not in the nut that reveals the squirrel. We have observed that the cat is interested in the mouse, the rat-dog in the rat, and the Irish setter in the prairie-fowl; but we never happened to seize and make use of the fact that all these interests are racial and ultimately inherited.

We have known that one squirrel lives essentially as every other squirrel lives; that the interests of one squirrel are the interests of the squirrel race. We have known that cats kill mice, and we have reared cats with the definite expectation that each new brood, and each cat in the brood, would be interested in mice; and yet we did not call in the educator and tell him that the vital thing on which we built our expectation was instinct.

Now if you will take away the mouse-killing instinct of the cat, you will at the same time have destroyed the cat's interest in mice. If you will take away the rat-killing instinct of the rat-dog, you will no longer have a rat-dog, for the dog's interest in rats will be gone. Therefore,

4. If we could take away all impulse (this ultimately means all instinct) from any creature, that creature could have no use for anything, hence could be interested in nothing. Interest is simply the feeling of usefulness of objects; and since no creature can have any use for any object unless that object promises to satisfy an impulse, an instinct, we are face to face with the fact that the ultimate determinants of interest are the impelling forces which we call instincts.

The interests of the twentieth century squirrel are essentially

the interests of the squirrels of all history. The interests of the twentieth century cat are essentially the historic cat interests; and the interests of the twentieth century man are essentially and fundamentally the interests of historic man. Were it not so, then we should need no history, no literature, etc., since nothing is eternal in the doings of men. But the fact is, the essentials of my life are the essentials of yours; indeed they are the essentials of all human life, and so the great problems of history, the great human interests, never die; and history is a living study. The eternal things of life do not die with the individual, but pass on to the next generation; and the vitality of the race is revealed to us in the racial habits, the inherited tendencies, the *instincts*.

Now, subject matter comes and goes; it is ever changing, and we cannot predict it. I do not pretend to know what will be the course of study of the elementary school in the next century. But the child who is to react upon that subject matter I can predict, for with all his manifold of feeling, impulse, instinct, attitude, he will certainly reveal his race when he comes to act. I can tell more or less definitely what any given squirrel will do, because I know the squirrel race,—its impulses, instincts, attitudes. I can predict more or less definitely what any given cat will do, because I know its racial impulses. So, too, we can know a child and predict his response if we know the stock of impulses that constitute his real racial inheritance.

5. The most vital need, and the most enduring thing, in all education is a working knowledge of the human impulses, human instincts (all impulse is instinct at root); for they are the eternal determinants of human interests; and when we have learned these racial impulses and have developed a technique of handling them, we shall have solved the biggest problem that has ever confronted the educator; namely, the problem of controlling human interests.

We already know and have named many of these human impulses; and we seem to know that there are more of them yet to be known. There is the ownership impulse, the curiosity impulse, the impulses of expression, experimentation, construction, exploration, play, communication, rivalry, manipulation, imitation, secretiveness, anger, fear, pride, affection, sex, sympathy, sociability, jealousy, envy, pugnacity, emulation, physical activity, mental activity, independence, reverence, shyness, collecting, hunting, hunger and thirst, cleanliness, and modesty.

The lines of demarkation among these impulses are not well drawn. There is more or less overlapping, and there are apparently gaps here and there. But our study is young, and our first great

problem, I may repeat, is the identification and naming of all of the racial impulses.

Now some of you may be about to say that this is a problem for the "pure psychologist"; but my reply is, the pure psychologist (whatever this may mean) has no problems. If he belongs to the human race, his neutral mechanism, brain and all, has been fashioned to suit the very impulses which we are seeking; namely, the impulses that are common to us all and which make him and all of us human. I may briefly say in passing that anything bids for interest and attention just in the degree that it promises to satisfy impulse; and this is the meaning of what we call "need". Just in the degree that anything does satisfy impulse, it is useful; and so our "culturists," our "useless education" brethren, are about to disappear along with the old notions of use and interest.

The second part of our great problem is the development of a technique of handling the human impulses, to the end of controlling the human interests. We are hardly to assume to change the human impulses. We have heard much in recent years about "killing off" and "starving out" the "bad instinct"; but the fact is, my brethren, we have no bad instincts. Had there been any bad instincts, their defeat would have eliminated them ages ago. All our racial impulses are valuable as springs to action. They represent activities that have proven so thoroughly valuable that our forefathers have repeated them consistently through the years until they have become reflex to the *n*th power. Every instinct is good at root, and we have none to spare; and the very attempt to kill some of them is what I may call the Teaching Tragedy. Because the ownership impulse impels the child to steal, is no sensible argument for killing off the ownership impulse. We need only to control the impulse by guiding it on to a better end. Because the impulse of fear impels the child to lie, is no sensible argument for killing off the impulse of fear. Now we have no impulses but may go out toward undesirable ends, hence the need of controlling them; but there is no one of them but may be made to go out toward good ends; that is, toward ends that are good for the race; and this is the ultimate test of all morality. These racial impulses represent modes of reaction that have been extremely good for the race, so good, indeed, that they have become the eternal life of the race. Here then is part two of our great problem; namely, the development of a technique of handling the impulses so that they may be guided by experience.

6. We get our driving force out of the racial impulses, the

strength of our fathers raised to the *n*th power; but we want this accumulated energy guided by twentieth century intelligence. The modern world must guide the accumulated energy of the ages. Such is the ground of progress; and let no man say that we should destroy any of the forces, any of the impulse that has accumulated through all the years of man's history.

Now we have a name for this process of directing impulse away from an impure end and toward a pure end. We have called it *sublimation*. This name, which was first applied to the effort to direct the sex impulse to pure ends, is now to stand for the process of directing any and all impulse to moral ends. We may therefore restate part two of our great educational problem, and say it is the development of a technique of sublimation.

One does not have to go far in the study of the sublimating process in education before one may discover that this process has already been carried quite far in teaching; but it has been carried on accidentally and non-consciously. Now we are to make it an overt, conscious, and purposive tool in education. Our schools have been utilizing the constructive impulse, the play impulse, the manipulating impulse, and so on, it is true; but now we are utilize these impulses as the only vital means of realizing our educational aims. In no other way can we touch the life of an individual; and so this linking together of subject matter and impulse, of experience and the pathways of racial expression, of knowing and the deep seated tendencies of doing, is in reality the vitality of teaching.

Now I have given thought to the application of the sublimating process to some of the problems of the teacher; and for the purpose of illustration here I have chosen to apply it to the hardest problem that I have ever discovered in education; namely, the problem of developing the moral will.

A moral will, as I see it, may be briefly defined as the will to serve the good of the race. When an individual is confronted with two or more possible lines of conduct, and he chooses any given one because he believes it will be best for all men, that will is moral. To develop such a will, I may repeat, is the hardest problem I know in education. The fact is, we are making men tremendously intellectual in nearly every field of human knowledge to-day; but I have not found an educator who is satisfied with our handling of the moral problem. We know how to sharpen a man's wits, and we are sure that we can train men up to do almost anything except one thing, and that is the right thing, the moral thing. It is still altogether too easy for a man to seek his own selfish ends in the world, to the injury

of society. Now the trouble with our moral teaching is, it does not reach the real life of the individual; and if morality is ever to be anything more than skin deep, if it is ever to be a genuine, vital, living morality, it must lay hold of the deep-seated springs to action, the racial impulses. But here arises a problem within a problem. Every impulse is self-centered, self-satisfying, that is, selfish. How, then, can impulse ever be made to realize ends that are good for others? Exactly this is the point at which our moral teaching has always broken down. We have assumed that morality demands that the individual must deny self and give his life to the service of his fellow men. Were this the actual meaning of morality, then we could have no moral will, since we have no self-annihilating impulse. Indeed if we could succeed in locating a man's moral center of gravity anywhere outside of himself, he would become at once an unstable moral creature, fit only for the insane asylum. But the fact is, morality does not call for self-abnegation, but for community of interests. Briefly and plainly told, the problem of developing the moral will is the problem of enabling the individual to see clearly that only that which is good for everyone is ultimately good for him; that there is in reality no conflict between the highest personal interests and the interests of the race. The moral center of gravity is therefore within and not without the self; and thus morality is self-centered and stable, fixed in the welfare of the individual self. This puts every impulse at the service of morality, and we can never have a moral will, indeed we can never have any will, without impulse.

With this orientation toward the moral problem, I see how we can handle the problem, and that is, by sublimation; and in order that I may make my meaning clear, I will apply the process to that point in school education where moral training has the feeblest hold; namely, the primary school. May I say in passing that childhood should be a busy time for sublimation, and that with a morality based on community of interests and not on self-abnegation, we can lay in the primary school a moral foundation that may astonish not only the modern Rousseau but the modern optimist.

The Sublimation Technique as Developed for the Play Impulse.

A teacher has planned to use a game, say the bean bag game, ostensibly for a number drill, but primarily as a tool for developing moral will. Here then we have the play impulse, a strong impulse in childhood, called into moral service. Perhaps ten children are to compete, thus adding the powerful and dangerous rivalry impulse. Now in this game, in this little play world, the serious business, as

the child probably sees it, is winning the game. Under the strong impulse to win (rivalry, in the main), when the competition is at white heat, it is easy for children to stoop to cheating in order to win. But the teacher's purpose is to develop the moral will, and that means here, the will to play fairly. If this end is to be realized each child in our little world of players must meet three requirements, namely, (1) he must know the bill of rights, the rules of the game; (2) he must feel the need of these rules as the guarantee of rights, of every player's rights; and finally, (3) he must will these rules and be ever ready to champion them and stand his ground when the bill of rights is trampled upon. Here then is a magnificent opportunity to develop moral backbone. Here we may teach the validity of law, the respect for law, the love of law, the will for law, that guarantees to everyone his rights.

The teacher introduces the game with the definite purpose of stirring up the play impulse just as thoroughly as she can, since she will need this impulse in full strength. She draws the concentric circles on the floor, then marks off the thrower's line, then toes the line and turns to the players and says, "Ready". She throws the first bag and every child leans forward to see what she has scored. Then she throws the remaining bags, and every child makes the count. Now the teacher says, "I like this game because we can all play it together; and I can be happier when I know we are all happy." Then she inquires, "Do *you* wish to leave anyone out of the game? or can *you* be happier when each one has a chance to enjoy our new game?" (Here the teacher uses her skill in calling into play a new impulse, namely, sympathy. It is largely on this impulse that she is to base the community of interests). The rules are now reviewed and each child is allowed one trial throw to see if he knows how to play the game. The teacher then says, "We can't play our game (pauses to give the play impulse a chance to react) unless we all play according to the rules. What shall we do, then, with anyone who breaks a rule?" They vote to rule out anyone who breaks a rule. Then comes the trying question addressed to each one in turn: "John, what shall we do with you if you break the rules that we must have in order to play the game?" Each accepts the penalty for himself as fully just. This is a vital step, for nowhere in the world is law safe until accepted by the individual as his own law.

We now have a double motive at work, namely, the will to play, and the will to have everyone play in order that all may be happy together (impulses of play and sympathy). Other impulses no doubt are, and still others will be, at work. The game starts with the teacher assured that this double motive may be successfully played

against cheating, bad temper, etc. The first player toes the line, turns to the class, and according to rule says, "Ready." This is his overt notice to the world that he is ready to begin and is willing for the whole world to see that he stands for fair play. He throws, makes his count (indeed all make the count), and writes the amount of his earnings opposite his name in the tabulum on the board.

The next player toes the line, forgets to say "Ready", and makes his first throw. He is quickly called to account by any one, for this is a world of law. Then the teacher says, "We are all sorry that James broke our rule. What does James wish to do because he broke a rule?" James votes to take the penalty in order that the game may go on, and he writes a cipher after his name in the tabulum.

The game continues; and the teacher allows the competitive (rivalry) impulse to come in and, in time, grow to white heat, while all the time she is cautiously playing the impulses of play and sympathy in the foreground. She commends the manly play (appeal to pride impulse), appoints a jury of manly players to settle close decisions (pride, construction, independence, etc.), allows the players to feel that they are running the game (independence), yet all the time she is watching for opportunities to drive home the moral values by linking them to the impulse of play and sympathy and pride and so on. A game can serve no higher purpose than this. Even rivalry may be played in trying to outdo in the nobleness of playing fairly. The moral values are reached just in the degree that the master hand of the teacher quietly builds up a little world spirit that loves and wills nothing less than equal rights and fair play.

I would that all men were trained in such a moral world, a world that knows keen competition and yet wills the square deal. The spirit of such a world is sorely needed to-day, for it can cure fraud and graft and greed, can cure all immorality indeed, and thus it solves our needy problem of moral teaching.

Such is the possible prowess of schoolcraft; such is the vitality of teaching. A teacher calls into service a little handful of childish impulses, and manipulates them by combining or opposing them in such ways as to avoid impure ends and realize such pure ends as moral will. Gradually the child may be weaned away from ends purely selfish, and he comes to love and will ends that make a better world for all of us to live in. This is the essence of sublimation.

By way of brief summary, I may restate (1) that the biggest word in education to-day, rightly understood, is motivation; (2) that the most vital element in motivation is the manipulation and control of the student's impulses to the end of calling out the deep-

est personality fully expressed in a moral will; and (3) that the most vital problem in education to-day is (*a*) the identification and naming of each and every one of our race-making impulses, and (*b*) the development of a technique of handling these impulses in order that we may control human interests in accordance with our most advanced ideals.

ELIMINATION FROM A DIFFERENT ANGLE.

By G. W. Gayler,

Superintendent of Schools, Canton, Ill.

During the last few years many statistical studies of elimination have been made, all pointing to the fact that a very large percentage of the pupils who enter school drop out before finishing the eight elementary grades, and a still larger percentage never finish the high school. In this discussion we have heard little concerning specific and helpful plans to hold children in school. The plans given below were developed in part at several different places but they have been more fully matured and carried out in Canton than in any of the other towns.

Large Percentage of Gain in Upper Grades.

The following table gives the enrolment of our schools by grades for the month of September for each of the three school years, 1910, 1911, 1912:

Grades	*1910*	*1911*	*1912*
First	303	328	346
Second	265	257	267
Third	281	272	260
Fourth	234	309	286
Fifth	223	207	261
Sixth	165	201	209
Seventh	120	163	165
Eighth	107	120	159
High School	203	255	283
Shepley	23	(counted above)	
Total	1924	2112	2236

This table shows that there has been a gain in the last two years in almost every grade, but that the big gains have been made in the upper grades of the elementary school and in the high school. The average percentage of gain for the whole system during these years has been 16 per cent. The gain in the first six grades has been only 10 per cent, while the gain in the last six grades has been 47.4 per cent. This shows that the high percentage of gain has been in the seventh

and eighth grades and in the high school where a very large majority of the children are over fourteen years of age.

In two years the gain in the high school has been 39.5 per cent. In the same time the eighth grade has increased 48.6 per cent, the seventh grade 37.5 per cent, and the sixth grade 26.6 per cent. The figures indicate that boys and girls above the legal age when they could drop out, are remaining in school, and that a greater effort than ever before is being made to have all the children of all the people get the maximum benefit of the schools. This does not mean that the problem has been solved, but it does mean that earnest efforts are being put forth and that these efforts are in a degree bearing fruit. We feel that the means used to hold children in school have been helpful but that only a start has been made along this line, and that this work should be given a great deal more attention than it has received in the past.

How did this come about?

How did this gain come about? In the first place a study of school conditions, statistical in its nature, was made and discussed in principals' and teachers' meetings. This study brought before the teaching group, as nothing else could, the actual condition with regard to elimination,—the problem to be solved. For years many of us have been contented to teach the children who come to school without much thought about the ones who did not come—the ones who had dropped by the wayside. For years many have not seen the problem of the eliminated child in its seriousness. When the whole matter was brought before them, the teachers as a body enlisted in the fight to save boys and girls for the upper grades and the high school. The missionary spirit of the teachers of the schools and the personal effort as a result of that spirit has had much to do with results.

Elimination due to Failure in Work.

Our investigation showed that a very large percentage of those who dropped out of school were of the class who failed in work. The overgrown boys and girls when held back will be eliminated sooner or later. One of the problems is to prevent failures whenever possible. Attempts at prevention, to be effective, must commence the first month of the school year. Within the first two months the teacher should know rather definitely who can carry the work of the grade without extra effort, and who can not do so without some personal attention. In questionable cases it has been the plan to give all children the chance to go on and in all cases to give individual help whenever it was possible to do so.

Change of Spirit of School.

Here is where the spirit of the school counts. Formerly in many schools it was considered that a teacher did not do her work well, that her room was not up to standard, unless there were the usual number of failures, varying from one-quarter to one-third of the class. This has been in a large degree changed, and now we have the understanding that if more than 15 per cent of a class fail there must be something wrong and an investigation must follow.

Two months before the end of the school year each teacher makes out a list of probable failures together with the cause of such failures and how each can be prevented. This list is gone over with the principal of the building, or the superintendent of schools, and each individual pupil failing in work is discussed, and if possible some way is found to help him make the grade.

Basis of Promotion.

Instead of making promotions on the amount and quality of work done and on this alone, all promotions are made after taking into consideration four points,—age of child, heredity and environment, ability to do the work, amount and quality of work done. After promotions are made, it is the privilege of the superintendent to reconsider any case that may come to him and if in his judgment it is best for the child to be sent to an advanced grade, this action is taken, always however with the definite understanding that he assumes all the responsibility for the act. This method of handling promotions together with the new spirit of the teaching force has greatly reduced the number of failures. In many cases the failures have been reduced to one-third of the number failing in previous years. At the same time the grades of the children and the quality of the work done have been raised.

Acquaintance with High School.

A lack of knowledge of what is done in the higher grades and in the high school together with a nervousness about the change from a small ward building to a central school, larger and more complex in its structure, has something to do with elimination. In order to give pupils some idea of the building and the work that is done, the High School each year entertains all the children in the grades above the fifth. This is done on an afternoon of a regular school day, and the children of the different rooms are brought to the high school building by the regular room teacher. The grades are assembled in the High School assembly room, where they listen

to a program consisting of music by the High School Orchestra, the High School Chorus, and the High School Boys' Quartette. Each of the literary societies presents a selection representing the work it does. The principal gives a talk on the work done in the High School, and upon the value of a high school education. One of the ward principals also presents the value of remaining in school. After a short interesting program of this kind, the children accompanied by their teachers and under the direction of high school pupils, are shown through all the different departments of the school. Especial attention is given to the science department, the manual training department, the printing department, the domestic science room, and the commercial department. In each of these departments students are at work illustrating the things done. In this way all departments are visited and the children become somewhat acquainted with the work offered. Probably for the first time they have had the opportunity of going through the building and becoming familiar with it. Whenever possible these same boys and girls with their parents are invited to a basket-ball game at night. The high school gymnasium and the high school grounds should be the center of school athletic activities so that the children will get the habit of coming there. All of this has its effect in holding children in school.

Talks about Value of Remaining.

Before the close of school in the spring each teacher is asked to talk to the children concerning the value of remaining in school. She encourages the children to talk about the school and gets all the reasons why they can not or will not remain in school. This free discussion sometimes brings out criticisms of the school which are vital and which should be considered by the teachers. The superintendent visits many of the rooms and talks on the same subject, explaining and emphasizing the work of the upper grades and the high school. These personal talks instruct children and parents as to the advantages offered and they also show the value of many things not clearly understood before. Our experience is that our plan is worth all the time and energy it takes and that it has a tendency to stop elimination.

Letters sent to Individuals.

During the month of August just before school commences a little leaflet entitled "Does It Pay to Attend School?" is mailed to every sixth, seventh, and eighth grade pupil enrolled the previous

year. It is also sent to many high school pupils. This is a direct appeal and in many cases there is no doubt that it has accomplished good. This leaflet brings home to pupils the value of an education in dollars and cents as well as the value of an education from the standpoint of an intellectual life.

In order to convey some idea of the contents of the leaflet, I am giving below four short selected paragraphs from it:

"1. Are you thinking of continuing at work and of staying out of school? Do you realize that only the weightiest of reasons should cause one to leave school? Never has individual training been so important, and sacrifice so wise a course to follow, as to-day. Every line of work is calling for men with power to think. Conditions of life make it necessary to choose wisely what you do and whom you follow.

"2. Statistics show that a young person having a high school education has many times as many chances for success as the person without that training. The financial value of an education has been estimated in the following way: A day laborer without an education earns on an average $1.50 per day for 300 days in the year during a period of 40 years. The earnings of his life amount to $18,000. One thousand is a fair average for the annual earnings of an educated man during a period of 40 years. The difference between the $40,000 and the $18,000 or $22,000 represents the value in future earning power of the time a boy spends in school. According to these figures the value in future earning power of a day in school is over $10.

"3. Again, the young man who has been brought to understand the writings and views of big men, has a power to enjoy what he reads and hears, for he has power to understand. You may feel that history has only to do with the past. Not so. It makes it possible to understand the present and often suggests plans in dealing with to-day's problems. Appreciation of other men and their successes is very necessary to the understanding of what things will succeed to-day. Appreciation means intelligent enjoyment.

"4. It pays in earning power to remain in school. It pays because of the greater power of mind that is developed. It pays because of training secured in dealing with organized groups of boys and girls. It pays in richness and fullness of life. It pays in strength and stability of character. From every point of view it pays."

Checking up Children.

After school begins in the fall every child enrolled the previous year must be accounted for. If a child can not be found, the fact is reported to the office and the truant officer is called upon to locate him and find out why he is not in school. This method checks every child who has attended the public schools.

In addition to all this our course of study has been undergoing a gradual change which makes it seem more practical to these boys and girls who see but little in Latin, History, Literature, and Mathematics, but who see much practical value in Domestic Science, Manual Training, Printing, Stenography, Typewriting, and Bookkeeping. This change of the course has just begun and it is our hope to place nearly every subject in the course in a new setting so that boys and girls can see that it is worth while to remain to master them.

WHISTLING AT WORK—A CRIME?

By Herbert F. Clark,

Principal Olive Special School, Los Angeles, Cal.

Not long ago the principal of one of the largest schools in a neighboring city went into his sloyd room where thirty boys were busily at work, and amid the din of saw and hammer his ear detected the merry whistle of a happy boy. He turned to the teacher in charge of the room and asked him if he allowed the boys to whistle while working. The teacher pondered a moment. "Well," he replied, "I hadn't really noticed it. Perhaps I had better tell him to stop." "Yes, I would," said the principal, "We can't have them whistling in school." So the *noise* was forthwith stopped, and the good old standard was maintained.

There are extremely interesting principles involved in this episode. The head of that school represents in a striking way a certain type of educational procedure. He stands for the notion that any indication of happiness in school is a crime. The sacred walls of the school room must not be polluted with the vile sound of whistling. He does not ask himself the questions,—What harm was that boy doing by giving vent to a wholesome sentiment with his lips while busily engaged upon some piece of furniture for his home? What particular quality does the sound of whistling possess that distinguishes it from the sound of hammer and saw, and makes it a fit subject for rebuke? Is it inconsistent? When has it been inconsistent to whistle while at work? Is it disorderly? Then whom does it disturb? Why should not all the boys whistle? What harm could it do? I know a sloyd room where the boys sing while at work. Yes, they all sing if they want to, and why not? Shouldn't heart and hand go together in the work of the world? It is absurd to repress the finest emotions while the declared aim of education is expression. What is the sloyd room but a place for concrete expression? The normal boy is a veritable storehouse of potential emotions. Restrict their wholesome expression, and they are apt to break out in unwholesome ways. It seems to me that the sloyd room is the place of all places where the boy should be encouraged to give the fullest and freest expression of the best that is in him. Herein lies the efficacy of manual work as a part of our educational procedure. There are unhappy moments enough in the life of the average boy, and if

perchance he bubbles over with joy in his school work, it isn't a bad omen for the kind of work he is doing or the attitude he is taking toward it.

The question naturally arises,—How far in sloyd or other school work can the spontaneous expression of joy take place without interfering with the quality of the school work as a whole? It has been demonstrated in the special schools of this city, those schools which take care of the truants and *so-called* 'incorrigibles,' that considerable freedom can be given boys in method and in conduct without seriously impeding the progress of their work. Indeed they do more work, perhaps not quite so good in quality, but certainly done with a more wholesome attitude, than in the regular schools from which they come. In the special schools, if a boy feels like whistling he whistles, if he feels like singing he sings, if he feels like boxing he boxes, provided some other boy will 'call his bluff'.

Through it all there is required of him a certain amount of school work each day and this work he must do. The result is that the boys soon learn to get their work done amid considerable confusion, which in itself isn't a bad lesson to learn. There is hardly any place in real life, excepting at funerals, where people walk on tiptoes and one can hear the clock tick. The notion that we must have absolute quiet in order to be able to concentrate our minds, is a relic of a past age. Real life is busy and bustling, and fortunate is he who can go about his own work and be so absorbed in it that he can whistle a merry tune and be heard above the noise of his fellows. That is just what the boy in our story was doing, and for that he was rebuked. What we teachers need to do is to drop the flimsy mask of false dignity and regard the boy as a *boy* and not as an automaton. We need to realize that growth of mind comes through wholesome expression and not through repression, and that wide latitude should be given each child in the kind of emotion he may express. We need to remember that a child cannot really be happy unless he is expressing his happiness in some emotional form. To inhibit the expression is to destroy the emotion in the child, and this is an educational sin.

Of course it takes a stronger teacher to manage a group of children where this wider freedom is given. Any policeman can control a large group of people without disorder, but he cannot arouse their interest and lead them into new fields of mental activity. The teacher needs a broadening of his educational vision, so that he can discern wholesome motives in the conduct of his pupils and so direct them that these motives shall be dominant. He needs the power to use school facilities as means in dealing with his children. To-day he may think best to ignore the regular school program altogether.

To-morrow he may reverse its operation, but always he will have the happiness and welfare of his group of children at heart. He utilizes the emotional tides of his class as well as of the individuals, in order that their expression may have in it the spirit of the group and of spontaneous endeavor. That whistling boy is a perfect type of joyous expression, and our educational aim should be to increase his kind a thousand-fold.

THE PHYSICAL STATUS OF THE SPECIAL CLASS FOR BRIGHT CHILDREN AT THE UNIVERSITY OF PENNSYLVANIA, SUMMER SESSION OF 1912.

By Harrison L. Harley,

Assistant in Psychology, University of Pennsylvania.

After a selection of bright children from the schools of the district in which the University is located had been made by the Social Service Department of the Laboratory of Psychology, the children reported to the Psychological Clinic for physical and mental tests and measurements. The weight, height, head and body dimensions were taken at this time, and certain other data were secured, such as general physical condition, stigmata, abnormalities, and mental age as determined by the Binet tests, all of which were entered upon the clinical records of the department.

The first interesting comparison is that of weight at the time of the first examination, made between April 26th and May 24th, and weight on July 1st. Of the children examined two did not increase in weight; one increased one-half pound (1.08 per cent); one, one pound (1.75 per cent); while one lost two and one-half pounds (3.51 per cent) and another lost four pounds (8.33 per cent). It has not been determined what causes were operative in reducing the weight in these two cases and causing it to remain stationary in two others. The figures given above will afford a comparison in terms of growth of the child's response to his ordinary mode of life and schooling and to the life directed by the special class.

A study was accordingly made of the growth of each pupil during the six weeks of the summer session in order to determine the effects on the pupil of the school luncheons, rest period, gymnastic work, and especial care exercised at school and in the home through the instrumentality of the Social Service Department. To ascertain the growth of the pupil, his weight and height were very carefully recorded at the opening of the session on July 1st, and again at the close of the session on August 8th. A few exceptions occur in the case of pupils entering the class after the session had begun.

Table A is a record of the weight of the children on July 1st and August 8th, and shows the gain in pounds of each pupil for the six weeks, as well as the per cent gain in weight. A consideration of table A brings forward some significant facts. In the first place,

TABLE A.

SHOWING GAIN IN WEIGHT DURING SESSION.

Child.	Weight at Opening of Summer School.	Weight at Close of Summer School.	Gain in Pounds and Kilos.	Per cent Gain in Weight during Session.	Per cent Gain in Height during Session.
I. Aet. 9	57 lbs.* 28.85 kg.	57 lbs. 25.85 kg.	0	0	Did not report.
II. Aet. 10	47 lbs. 21.32 kg.	49.5 lbs. 22.456 kg.	2.5 lbs. 1.136 kg.	5.32	0.02
III. Aet. 8	51 lbs. 23.13 kg.	53 lbs. 24.04 kg.	2 lbs. 0.91 kg.	3.92	0.014
IV. Aet. 8	57 lbs. 25.85 kg.	62 lbs. 28.12 kg.	5 lbs. 2.27 kg.	8.77	0.012
V. Aet. 8	40.5 lbs. 18.37 kg.	45 lbs. 20.41 kg.	4.5 lbs. 2.036 kg.	11.11	0.006
VI. Aet. 7	47.5 lbs. 21.546 kg.	52 lbs. 23.59 kg.	4.5 lbs. 2.036 kg.	9.47	Did not report.
VII. Aet. 7	44 lbs. 19.96 kg.	49 lbs. 22.23 kg.	5 lbs. 2.27 kg.	11.36	Did not report.
VIII. Aet. 7	50.5 lbs. 22.91 kg.	53 lbs. 24.04 kg.	2.5 lbs. 1.136 kg.	4.95	No Gain.
IX. Aet. 8	58 lbs. 26.31 kg.	65 lbs. 29.48 kg.	7 lbs. 3.18 kg.	12.07	Gain very slight.
X. Aet. 8	47.5 lbs. 21.546 kg.	51 lbs. 23.13 kg.	3.5 lbs. 1.586 kg.	7.36	0.005
XI. Aet. 10	75 lbs.* 34.02 kg.	77 lbs. 34.93 kg.	2 lbs. 0.91 kg.	2.66	No Gain.

*Weight taken on entering school.

the work of the class was in no way deleterious to the health of the pupils; and secondly, in spite of academic work, confinement indoors, and the general tendency of July and August weather to lessen weight in children or at least cause it to remain unchanged, an appreciable gain in weight was registered for every pupil except one, and in some cases the gain was remarkably large. Particularly encouraging are those cases in which an increase in stature was also found, for in such instances a better bodily growth occurred.

The average increase in weight for the boys and girls of the class was 7 per cent. Table A records in the case of several individuals gains in weight ranging from about 7 per cent to about 12 per cent. When compared with the average yearly gain for the respective ages as recorded in such tables as are available for comparison, as, for example, Dr. Hartwell's,[1] the per cent gains of table A may seem exceedingly large. Several conditions must be borne in mind, however. In the first place, growth shows a marked periodicity, and it is possible that the conditions of the school favored in certain

[1] *See* Tanner, Amy. The Child, p. 26. Chicago, 1909.

cases the rapid increase in weight for the season under observation. Secondly, school children are particularly inclined to show great variations owing to the extent to which exercise is indulged in at various seasons. In this case, the period between the closing of the public schools and the opening of the special class might have been a period of excessive exercise for some of the children and accordingly a weight below the average for the child was recorded when the session opened. A gain of 9 or 10 per cent is not unusual. The writer has observed a boy who within the past six weeks (to March, 1913) has increased from 62.21 to 68 pounds—a gain of 9.3 per cent.

The quantitative measurement of bodily improvement which the foregoing record presents may serve several purposes. The first concern of the Laboratory of Psychology was the securing of children for its Bright Class. After having determined the fitness of a certain child for admission to this class, the social workers of the Psychological Clinic must approach the parents of the child and convince them of the desirability of allowing him to attend. No argument is necessary to convince parents of the intellectual benefit to their child, but they rightfully question whether this intellectual progress will not be made at the expense of physical development, and harm thereby result. It is gratifying to the Department of Psychology to note that the figures afford a positive and convincing answer to the question of parent, teacher, or investigator interested in this particular work. Let a study be made at this point of the results at the end of the two periods, namely, from the first examination to July 1st, and from July 1st to August 8th.

In the second place, the results of the care bestowed upon the pupils in the form of rest, luncheon, and so forth, will interest those persons concerned in the socialization of the schools. The school luncheon and rest period received during the summer session a thorough and typical, if not extended, trial.

Thirdly, the data given above and more in detail in table B possess some anthropometric value, but no research beyond the correlation of height and weight to age has been attempted.

The conclusions to be drawn from the experience of the summer school are that where due attention is given to such matters as diet, rest, exercise, home surroundings, and physical conditions (teeth, eyes, throat, and so forth), the life of the school may foster physical improvement and well-being, as it has been made to serve the purposes of intellectual progress.

TABLE B.

Child.	Actual Age at Opening of Summer Session.	Height at Time of Physical Examination.	Weight at Time of Physical Examination.	Average Height for Age, after Hastings.	Height and Weight Correlation for Age, according to Hastings.	Deviation.	Weight at Opening of Summer Session, July 1, 1912.	Weight at Close of Summer Session, Aug. 8, 1912.	Gain in Pounds and Kilos.	Per cent Gain.
I	9.25	49″ 124.46 cm.	57 lbs. 25.85 kg.	49.55″ 125.86 cm.	124 cm. = 24.70 kg. Fourth Group of 8 for Age.	+2.55 lbs. +1.15 kg.	57 lbs.* 25.85 kg.	57 lbs. 25.85 kg.	0	0
II	10.66	48″ 121.92 cm.	45.5 lbs. 20.64 kg.	51.69″ 131.29 cm.	122 cm. = 22.70 kg. Lowest Group of 8 for Age.	−4.54 lbs. −2.06 kg.	47 lbs. 21.32 kg.	49.5 lbs. 22.456 kg.	2.5 lbs. 1.136 kg.	5.32
III	8.58	50″ 127 cm.	51.5 lbs. 23.36 kg.	47.31″ 120.16 cm.	126 cm. = 25.53 kg. Highest Group of 8 for Age.	−4.78 lbs. −2.17 kg.	51 lbs. 23.13 kg.	53 lbs. 24.04 kg.	2 lbs. 0.91 kg.	3.92
IV	8.4	50″ 127 cm.	57 lbs. 25.85 kg.	47.76″ 121.31 cm.	127 cm. = 26.93 kg. Highest Group of 8 for Age.	−2.37 lbs. −1.07 kg.	57 lbs. 25.85 kg.	62 lbs. 28.12 kg.	5 lbs. 2.27 kg.	8.77
V	8.0	44.8″ 113.79 cm.	43 lbs. 19.50 kg.	47.76″ 121.31 cm.	113 cm. = 19.72 kg. Lowest Group of 8 for Age.	−0.49 lbs. −0.22 kg.	40.5 lbs. 18.37 kg.	45 lbs. 20.41 kg.	4.5 lbs. 2.036 kg.	11.11
VI	7.58	42.29″ 107.42 cm.	47.34 lbs. 21.47 kg.	45.26″ 114.95 cm.	107 cm. = 17.38 kg. Lowest Group of 8 for Age.	+9.02 lbs. +4.09 kg.	47.5 lbs. 21.546 kg.	52 lbs. 23.59 kg.	4.5 lbs. 2.036 kg.	9.47
VII	7.24	48″ 121.92 cm.	48 lbs. 21.77 kg.	45.55″ 115.69 cm.	122 cm. = 24.47 kg. Highest Group of 8 for Age.	−5.95 lbs. −2.70 kg.	44 lbs. 19.96 kg.	49 lbs. 22.23 kg.	5 lbs. 2.27 kg.	11.36
VIII	7.59	48.75″ 123.83 cm.	50.5 lbs. 22.91 kg.	45.55″ 115.69 cm.	122 cm. = 24.47 kg. Highest Group of 8 for Age.	−3.44 lbs. −1.56 kg.	50.5 lbs. 22.91 kg.	53 lbs. 24.04 kg.	2.5 lbs. 1.136 kg.	4.95
IX	8.0	51.75″ 131.45 cm.	57 lbs. 25.85 kg.	125.86 cm. at 9 Yrs. 121.31 cm. Taken at 8 Yrs.	132 cm. = 28.36 kg. Highest Group of 8 for 9 Years.	+5.52 lbs. +2.50 kg.	58 lbs. 26.31 kg.	65 lbs. 29.48 kg.	7 lbs. 3.18 kg.	12.07
X	8.34	44.65″ 113.41 cm.	47 lbs. 21.55 kg.	47.76″ 121.31 cm.	113 cm. = 19.72 kg. Lowest Group of 8 for Age.	+4.03 lbs. +1.83 kg.	47.5 lbs. 21.546 kg.	51 lbs. 23.13 kg.	3.5 lbs. 1.586 kg.	7.36
XI	10.48	54.45″ 138.30 cm.	75.5 lbs. 34.25 kg.	51.56″ 130.95 cm.	138 cm. = 31.08 kg. Sixth Group of 8 for 11 Years.	−7.0 lbs. +3.17 kg.	75 lbs.* 34.02 kg.	77 lbs. 34.93 kg.	2 lbs. 0.91 kg.	2.66

*Weight taken after opening of session. Average gain 6.99 per cent.

REVIEWS AND CRITICISM.

Story-telling in School and Home. A Study in Educational Æsthetics. By Emelyn Newcomb Partridge and George Everett Partridge, Ph.D. New York: Sturgis and Walton Company, 1912. Pp. x+ 323.

Dr. Partridge is the author of several books on psychology and was formerly a lecturer in Clark University. Mrs. Partridge is a professional story-teller for the playgrounds and garden cities of Worcester, Mass. She contributes to the present book several chapters based on her experiences in the art of story-telling, and presents in her own way examples of the types of story most useful for educational purposes; while Dr. Partridge has worked out the scientific principles involved in story-telling and explains its value from the standpoint of genetic psychology.

Naturally enough the first chapter sketches the history of this oldest of all the arts, the best preserved and the most universally beloved, and the second chapter deals with the reason why stories have been created by the race. They are the outcome of "an effort to obtain vicarious satisfaction from an unyielding world. . . . The story is eminently practical to the savage," says Dr. Partridge, for "it arouses feelings that lead to confident activity in the midst of chance." It might be objected that in Moslem countries where story-telling has always flourished and where it has reached its most perfect expression as a dramatic art, the effect of the story is quite the opposite. Far from inducing activity of any sort, it seems to gratify the craving for excitement on the part of the listeners, and so to keep them passively dependent upon Fate.

This objection does not apply to primitive stories, which are the best for children. "These stories arouse deep instincts which our higher culture materials cannot reach; and they bring to the surface and help to control forces of the unconscious life, which often as fears, dreams, morbid desires and nervous manifestations later afflict the child. . . . Humor is socializing and arouses feeling and reactions that cannot be reached in any other way. Especially the simple, wholesome fun of the savage is good for the child. It makes him sympathetic and alert, and it has the excellent virtue of never having been written for the purpose of being funny."

In the concluding chapters of Part I the difficult topics of "The Story in Moral Education," "The Story and the Child's Religion," and "The Story and the Individual," are handled with delicacy and skill. Part II is made up of eighteen stories of varying length and widely different types. As is to be expected, some are not so good as others, but two or three at least are of the highest degree of excellence. The volume closes with a chapter of very helpful "Suggestions for Reading."

A Montessori Mother. By Dorothy Canfield Fisher. New York: Henry Holt and Company, 1912. Pp. xiv + 240.

To an interpretation of what the Montessori idea promises to American mothers, Mrs. Fisher has brought the keen insight and vividly graceful style that have made her magazine stories so enjoyable. Returning from a prolonged stay in Rome she was immediately set upon and besought by friends, acquaintances, by strangers even, for an account of what she had seen. "How many evenings," says Mrs. Fisher, "have I talked from the appearance of the coffee-cups till a very late bedtime, in answer to the demand, 'Now, you've been to Rome, you've seen the Montessori schools. You saw a great deal of Dr. Montessori herself and were in close personal relations with her. Tell us all about it. Is it really so wonderful? Or is it just a fad? Is it true that the children are allowed to do exactly as they please? I should think it would spoil them beyond endurance. Do they really learn to read and write so young? And isn't it very bad for them to stimulate them so unnaturally? And'— this was a never-failing cry—'what is there in it for our children, situated as we are?'"

"A Montessori Mother" is the answer to all these questions and many more that have occurred to our minds. Not the least interesting chapter is concerned with the life history of the Countess Montessori. "Her battles with prejudices of all sorts," the author observes, "have hardened her intellectual muscles and trained her mental eye in the school of absolute moral self-dependence, that moral self-dependence which is the end and aim of her method of education and which will be, as rapidly as it can be realized, the solvent for many of our tragic and apparently insoluble modern problems. . . . . It is hard," continues Mrs. Fisher, "for an American of this date to realize the bomb-shell it must have been to an Italian family a generation ago when its only daughter decided to study medicine. . . . It is safe to say that an American family would see its only daughter embark on the career of animal tamer, steeple-jack, or worker in an iron foundry, with less trepidation than must have shadowed the early days of Dr. Montessori's medical studies. One's imagination can paint the picture from the fact that she was the first woman to obtain the degree of Doctor of Medicine from the University of Rome, an achievement which was probably rendered none the easier by the fact that she was both singularly beautiful and singularly ardent."

After telling of Dr. Montessori's remarkable success in the training of feebleminded children and the beginning of her experiment with normal children in the first Casa dei Bambini, opened in January, 1907, Mrs. Fisher goes on to sketch the rapid growth of the movement, showing how educators in Rome are divided into partisan and hostile camps and how it has come about that there is now "not one primary school which is entirely under her care, which she authorizes in all its detail, which is really a 'Montessori school'." The nearest approach to a school under Dr. Montessori's control in Rome is the one in the Franciscan nunnery in the Via Giusti. "But even here," adds Mrs. Fisher, "it can be imagined that the ecclesiastical atmosphere, which in its very essence is composed of unquestioning obedience to authority, is not the most congenial one for the growth of a system which uses every means possible to do away with dogma of any sort and to foster self-dependence and first-hand ideas of things."

And finally, in answer to that most touchingly eager cry,—What is there in all this for *our* children, situated as we are?—Mrs. Fisher bids her readers take heart. "We can collaborate in our small way," she says, "with the scientific founder of the Montessori Method, and can help her to go on with her system (discovered before its completion) by assimilating profoundly her master-idea, and applying it in directions which she has not yet had time finally and carefully to explore, such as its application to the dramatic and æsthetic instincts of children. Above all we can apply it to ourselves, to our own tense and troubled lives. We can absorb some of Dr. Montessori's reverence for vital processes. Indeed, possibly nothing could more benefit our children than a whole-hearted conversion on our part to her great and calm trust in life itself."

A. T.

NEWS AND COMMENT.

Statistics of Population—A Criticism.

DEPARTMENT OF COMMERCE AND LABOR, BUREAU OF THE CENSUS
WASHINGTON, D. C., January 23, 1913

To the Editor of The Psychological Clinic:

. . . . . .

In regard to the errors in the New York statistics[1] alleged to have been derived from the Census,—after considerable difficulty I think I have gotten to the root of the matter.

What I could not explain very satisfactorily to my own mind was the statement that in 1900 there were so few persons of mixed parentage and in 1910 more than half a million. The fact is that two different definitions of parentage are used. In 1910 the compiler of the table has accredited to any given country, as for instance Ireland, only those persons both of whose parents were born in Ireland. In 1900 he has accredited to Ireland

1. Persons with both parents born in Ireland.
2. Persons with one parent born in Ireland.
3. Persons with Irish mothers, but with a father of some other foreign nationality.

The two figures are therefore not comparable, and the conclusions which he draws as to the tremendous loss in population of Irish parentage are altogether unjustified. There was some loss between 1900 and 1910, but according to the available figures for 1910 it was somewhere about 30,000 persons instead of 165,000 as stated in the table. I have run down the persons of Irish parentage so far as the material is accessible for the two censuses, and it is given in the following table:

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[1] *See* "Age and Progress in a New York City School" by William E. Grady in THE PSYCHOLOGICAL CLINIC, Vol. vi., no. 8, January 15, 1913.

Irish Parentage.

	1910	1900
1. Both parents born in Ireland	562,466	595,267
2. One parent born in Ireland the other in the United States	113,954	97,556
Total 1 and 2	676,420	692,823
3. Mother Irish, father of other foreign nationality	32,688	
Total 1, 2 and 3	725,511	

My figures for 1900 and for 1910 are not exactly identical with those of the table. The 1910 figures given in the printed table were probably derived from some preliminary figures. Why the figures for 1900 should not correspond I do not know, but there is a difference of only about 2000 in the result. I have verified the figures which I took from the population volume of 1900.

These figures for Ireland show that a properly constructed table would probably show less change than the figures printed in the CLINIC, but I presume that they would not in any very high degree alter the main results of the table. I think it is rather unfortunate that errors of this kind should creep into the CLINIC.

. . . . . .

With kind regards,

Yours very truly,

(Signed) ROLAND P. FALKNER.

Volunteer Co-operation with Public Schools.

It is hard for the average citizen to realize that in expenditures alone the public schools represent one-third of the transactions of the municipality; that of every dollar of taxes he pays, one-third goes to the building of school houses and the payment of teachers' salaries. Besides this, the human element in the schools is worth more than all the waterworks, gas plants or streets that the municipality could buy. Our own children are the raw material which we pour into our great educational factories, and our employees and co-workers are the product. On the character and efficiency of this product depends the real welfare of any city.

It is a popular fallacy that Americans are interested in education, that the voters are concerned about the public schools and give time and money for their betterment. When a crisis faces the school system, citizens join in enthusiastic support of a faction or more often in destructive criticism, but usually the business man takes the schools very much for granted and seldom is aroused to a real interest in education.

"School boards serve without pay. 'Good men,' for the most part, are put upon them. Why not leave it there?"

But individuals here and there are learning that good men without modern methods or careful scrutiny or progressive ideas may produce poor results in a school system as easily as in a bank.

The need is evident for a volunteer organization, with funds sufficient to

secure the services of experts who shall definitely study, day by day, the problems of the school in order that the Board of Education may have thorough appreciation as well as intelligent criticism. It is only thus that democracy can show its power through the schools.

Such a volunteer organization serves as a clearing-house of information, as a research bureau for facts, and as a mouthpiece for organized public opinion. It will work through and with the constituted authorities in constructive efforts and not through random comment. The Public Education Association of Philadelphia for a full generation has sought to serve this purpose.

JAMES S. HIATT, *Secretary.*

The Psychological Clinic

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A SECOND STUDY OF MENTAL FATIGUE IN RELATION TO THE DAILY SCHOOL PROGRAM.

BY W. H. HECK, M.A.,

Professor of Education, University of Virginia.

The author recently published a report[1] on an experiment with forty classes, 1153 pupils, in four New York City Schools. The present report deals with a similar experiment with sixteen classes, containing 573 pupils, in three Lynchburg, Va., schools. The important difference between the experiments is the amount of continuous work required by the tests. The New York classes were given four ten minute tests at four periods of the school day, the Lynchburg classes two twenty-five minute tests at two periods. The subject matter used was the same in both experiments, but the Lynchburg classes took two tests as one.[2] The reason for this extension of time was the supposition that a ten minute spurt might not reveal the amount of fatigue present, the pupils working the short test with fairly uniform efficiency at four periods of the school day. A continuous application for twenty-five minutes could hardly fail to reveal most of the fatigue present at the time of starting the test and the further possible fatigue from the longer test itself. If the fatigue from the test itself were equally present in the morning and in the afternoon work, it would be neutralized in the results; but if it were greater in the afternoon on account of greater fatigue at the time of starting, the difference would be added to the latter. The longer test therefore has two possibilities of revealing fatigue and is also a better illustration of the time required, though with less continuous pressure, for study and recitation in actual school practice.

[1] Complimentary copies of this monograph will be sent on request. The author is preparing a monograph on the literature of the subject.

[2] As the Lynchburg classes were slower in this kind of work, twenty-five rather than twenty minutes were allowed.

The Lynchburg tests were given on February 25 and 27, 1913, to the 5A, 5B, 6A, and 6B classes in Biggers School; on February 26 and 28 to the 5A, 5B, 6A, and 6B classes in Monroe School; on March 11 and 13 to the 7B, 7A, 6B, and 6A1 classes in Federal School; on March 12 and 14 to the 6A2, 5B1, 5B2, and 5A classes in Federal School. The weather was mild, and window ventilation was used in addition to the furnace system. The schools had a one-session day, with a fifteen minute recess soon after the morning tests and a twenty (sometimes fifteen) minute recess before the afternoon tests. During the second recess many pupils ate lunch at home or school. This recess probably increased the efficiency in the afternoon tests; but as every school has or should have a recess near this period of the school day, the conditions of the Lynchburg tests were typical, certainly for a one-session school day. The departmental system of instruction allowed no uniform program of recitations and study periods in the classes tested. The children represented for the most part hygienic opportunities at home and had been examined by their teachers for eyesight and hearing. All the classes included both boys and girls, the total being 292 boys and 281 girls. The average age was 12.55 years.

The following description is condensed and adapted from the report before mentioned, to which the reader is referred for further discussion. The departmental teacher put aside her work for my test but remained in the room at my request. I gave detailed directions to the class and then with the help of the teacher put on each desk a test paper with the blank side up. After the name, etc., had been written, the children turned the papers over immediately on signal and worked steadily for twenty-five minutes. Great care was taken to be exact in starting and stopping. The children thought they were being examined for correctness and speed but did not know how much time was being allowed and did not rush toward the end. The very few children who finished before the time was out looked over part of their papers. The spirit of the work was pleasant and earnest, and reduced to a minimum the element of boredom, probably the greatest influence in decreasing the quantity and quality of work in the ordinary routine of the school day.

The time schedule was so arranged as to test each class in the morning and in the afternoon. The classes were combined into groups of two, one being a half-grade below (A) or above (B) the other. The first class in a group took the first test in the morning of the first day and the second test in the afternoon of the second day following; the second class took the first test in the afternoon of the first day and the second test in the morning of the second day after.

In this way the practice effect of the first class in the second test in the afternoon was balanced against that of the second class in the morning and consequently neutralized, leaving the fatigue effect free for comparison at the two periods. This arrangement was based upon a belief in the approximate equality of the practice effect in the two classes in a group. Even the slight differences that might have occurred were neutralized by giving the second test in the morning to the B classes and in the afternoon to the A classes of the first four groups, and then by giving the second test in the morning to the A classes and in the afternoon to the B classes of the second four groups.[3]

Two groups were tested in a day, the two classes of the first group at about 9:20 A. M. and 1:30 P. M. respectively and the two classes of the second group at about 9:50 A. M. and 2:00 P. M. respectively. On the second day following, the classes tested before in the morning were tested in the afternoon, and *vice versa;* but the classes of the second group followed as before immediately after the corresponding classes of the first group, each group constituting a complete unit by itself with the same time relationship between the classes as in all the other groups. Testing two groups a day gave a wider representation of the school day, fifty minutes of morning work and fifty minutes of afternoon work.

The papers were graded by me by a gross method of counting answers only, very similar to that used by Mr. Courtis. Each test contained thirty-two points divided as follows: Two groups of two examples were each credited with one point, this point being counted wrong on account of one or more mistakes in either example; ten examples were each credited with one point, the point being counted wrong on account of one or more mistakes in the example; ten examples were each credited with two points, one point being counted wrong on account of one mistake, and two points being counted wrong on account of two or more mistakes, in the example. A gross method of counting answers over-emphasizes mistakes in proportion to the total amount of work done, not only at one period but even in a comparison between the percentage of error at two or more periods. The results of my New York tests showed that in the same papers the average increase in percentage of error at the three periods after the first period was by the gross method 3.2659 times that by the detailed method of counting every figure put down by a child in working the examples. The increase in percentage of error in the present results at the second period is therefore greater than the actual decrease in efficiency of the children tested. However, the gross

[3] One group was composed of 6A2 and 5B1, with the half-year relationship between classes as in the other groups but with different grades.

method takes far less time for grading papers and is sufficiently accurate for comparison of the work at periods to which it has been uniformly applied.

TOTAL RESULTS

School	Class	Pupils	First Period			Second Period		
			Test	Right	Wrong	Test	Right	Wrong
Biggers...	5A	43	1	12.67	5.02	2	16.53	6.14
" ..	5B	43	2	15.53	7.42	1	12.79	6.51
" ..	6A	44	1	15.61	7.34	2	16.64	9.23
" ..	6B	39	2	19.21	7.10	1	18.18	6.23
Monroe..	5A	34	1	14.09	6.44	2	15.15	8.56
" ..	5B	46	2	15.04	7.26	1	10.96	6.39
" ..	6A	35	1	17.17	4.54	2	20.14	6.54
" ..	6B	32	2	21.00	6.62	1	16.59	5.94
Federal ..	7B	33	1	19.64	5.00	2	21.33	7.12
" ..	7A	41	2	19.27	7.12	1	16.98	6.66
" ..	6B	30	1	15.60	5.27	2	17.83	6.80
" ..	6A1	28	2	21.86	7.04	1	18.43	7.54
" ..	6A2	33	1	14.61	5.33	2	17.09	6.58
" ..	5B1	34	2	17.24	7.09	1	14.38	6.41
" ..	5B2	28	1	12.64	5.96	2	15.96	7.18
" ..	5A	30	2	14.40	6.37	1	11.47	6.60
	16	573		16.60	6.31		16.28	6.90
Sum of right and wrong points.....				22.91			23.18	
Relative amount done....				100.00			101.18	
Per cent right.....				72.46			70.23	
Relative per cent right...				100.00			96.92	

The average of right and wrong points for the sixteen classes at each period were added and the general average taken, in which all individual, class, and group variations were merged. *The sum of the general average of right and wrong points at the first period was compared with that at the second period, giving an increase of 1.18 per cent at the second period. The percent right of the sum of right and wrong points at the first period was then compared with the per cent right at the second period, giving a decrease of 3.08 per cent at the second period.* The increase in quantity was probably due in part

to the same influences as was the decrease in quality, greater speed and greater carelessness often going together.

Even the slight decrease in efficiency shown by these results is larger than the actual decrease in the classes tested, because in Federal School the 5A class was somewhat disturbed in its afternoon work by the marching out of the other classes, and because the 7B and 6B classes had only a short indoor recess, on account of rain, before the afternoon tests. This is partly shown, though other influences may have entered, by the increase in quantity of 2.08 per cent and the decrease in quality of 3.37 per cent in the eight classes in the Federal School, as compared with the increase in quantity of 0.22 per cent and the decrease in quality of 2.79 per cent in the eight classes in Biggers and Monroe School.

As the average per cent of increase in quantity in the New York tests, for the three periods after the first period, was by the detailed method of grading 1.0164 times that by the gross method, we can surmise that the 1.18 per cent increase in quantity in the Lynchburg tests by the gross method would be about 1.20 per cent by the detailed method. And as the average decrease in quality in the New York tests was by the detailed method only 0.3062 times that by the gross method, we can surmise that the 3.08 per cent decrease in quality in the Lynchburg tests would be about 0.94 per cent by the detailed method.

By a comparison of the results by the gross method in the twenty-five minute test in the afternoon in Lynchburg with the average of the two ten minute tests in the afternoon in New York, we have 1.18 per cent increase in quantity in Lynchburg as compared with 1.84 per cent, and 3.08 per cent decrease in quality as compared with 5.61 per cent. In spite of the longer requirement for continuous work, the Lynchburg children show a smaller decrease in efficiency, probably on account of their better hygienic opportunities at home.

In order to determine whether the decrease in efficiency at the second period in Lynchburg were less in the more advanced grades, the following percentages were calculated: six fifth grades (three groups) showed an increase in quantity of 0.11 per cent and a decrease in quality of 2.82 per cent; six sixth grades (three groups) showed an increase in quantity of 0.36 per cent and a decrease in quality of 2.74 per cent; two seventh grades (one group) showed an increase in quantity of 2.08 per cent and a decrease in quality of 3.54 per cent. These slight differences seem to have no significance, the greater decrease in quality in the seventh grades being due mainly to the fact before mentioned that 7B had only a short indoor recess before the afternoon test.

An important consideration is the greater decrease in efficiency shown by the boys than by the girls, this difference even being noticeable in the greater restlessness of the boys during the tests. Complete tables of the sixteen class averages were made of the results by the boys and the girls, and the general averages, percentages, etc., were calculated. The boys showed an increase in quantity of 0.74 per cent and a decrease in quality of 4.25 per cent; the girls showed an increase in quantity of 1.62 per cent and a decrease in quality of 1.96 per cent. The boys showed an increase in quantity 0.4568 times that by the girls and a decrease in quality 2.1684 times that by the girls.

The practice effect was calculated by rearranging the class averages in columns according to tests rather than periods, thus neutralizing for the most part the decrease in efficiency at the second period. The sixteen classes showed an increase in quantity of 13.22 per cent in the second test and a decrease in quality of 0.50 per cent.

The results of the twenty-five minute tests in Lynchburg greatly strengthen the conclusions from the ten minute tests in New York. The decrease in efficiency in the afternoon tests must have been due in part to unhygienic conditions in school, home, and children; but however much of this decrease we attribute to fatigue, the fatigue is still so slight as to be almost negligible in a hygienic school environment, except in regard to the few easily fatigued individuals.

POLITICS, EFFICIENCY, AND RETARDATION.

By Felix Arnold, Pd.D., Ph.D.,

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After all the statistics on retardation and repeating have been gathered, after the most complete schemes of organization, classification, and promotion have been devised, in the final analysis all will be of little avail unless we have the following,—(1) scientific supervision of class work, (2) proper methods of instruction and discipline, (3) graded and standardised courses of study, (4) selection, appointment, and promotion of school officials on the basis of merit, and (5) sufficient money to equip and supply schools and classrooms. In factory management scientific supervision has become an established fact, of which the value is now measured in terms of dollars and cents,[1] but in the schools, supervision hangs like a yellow cloud over the classroom and shuts out many of the sources of sweetness and light. Where education stalks along the dark and crooked ways of political preferment, nothing else can be expected. If all the officials were scholars, less harm would be done, but too often the officials are not scholars, and the scholars are not officials. Efficiency then is not the title to preferment, and even if in the lower strata civil service is in force and is flaunted before the public, at the top the augurs smile and perhaps drown comment in the flowing bowl.

There are one or two notions which animate retarded school officials who owe their positions to political preferment. One such notion is, "Run things quietly and smoothly;" the other is a misguided paternalism which neglects the children entirely, and looks upon the school system as a place which is to provide easy berths for young ladies and gentlemen who are properly connected. The political appointee does not want any fuss. So long as there is no agitation, there will be no investigation, there will be no sharp call for standards, progress, results, and efficiency. It is better to let things go as they are than to present and to uphold standards. A standard implies definite knowledge, definite acquaintance with

[1] *See, among others,* Emerson, H., *Efficiency,* and *The Principles of Efficiency,* Taylor, F. W., *The Principles of Scientific Management,* Parkhurst, F. A., *Methods of Scientific Management,* Diemer, H., *Factory Organization and Administration,* (This book has an excellent bibliography), Arnold, H. L., *The Complete Cost Keeper,* and *The Factory Manager and Accountant.*

research here and abroad, wide knowledge of the literature of the subject, ability to collect facts and interpret them, stamina enough to enforce proper classroom methods and humane treatment of children. Now the political appointee has no such standards, in fact, he looks with contempt upon anything which smells of the university, the laboratory, or the library, grandiloquently stigmatises the student as a theoriser spinning webs in cloud-cuckoo-land, and loudly ridicules any suggestions which would tend to stir things up. Moreover, good living and drinking usually give the political appointee a 'presence,' and enable him to swell majestically before lay boards who are duly impressed with any statements which such an imposing figure may offer.

A misguided paternalism is a second idol which tends to produce retarded teachers and so retarded children. Your politician likes to pose as a deity who is able to 'fix things up,' who is able to make the teacher 'happy,' and who can promise his friends that Miss So-and-so will not be bothered. The questions which are put to the teacher are not, 'What work are you asked to do,' or, 'What methods are you asked to follow,' or 'What results are you asked to attain,' or, 'How are you supervised,' or, 'What instructions are you given;' but instead, in a benevolent manner are asked, 'Are you happy?' and, 'Do you like your school?' No doubt such hedonistic tendencies should have a place in the school, but they should not be the sole criterion of efficiency. Your political appointee hates work, and is never so happy as when he or she is doing nothing, and is not 'bothered' in so doing.

In many towns and cities the teachers and the principals of the schools are selected by competitive examination, and appointed from an eligible list. Their appointment is the result of merit. But when the retention of their positions, and their periodical increases in salary depend upon the approval of a superintendent who is directly appointed by a political Board of Education, civil service has somewhat the sound of a tinkling cymbal. Ambition to improve is smothered at the outset. Study becomes the handmaid to politics, and the political club replaces the library, the laboratory, and the lecture room. A principal has little to rouse him to improve the condition of the children. Plans of organisation which he may devise, improved methods which he may outline, and schemes to advance children more rapidly and secure individual attention to them will cause a stir among the teachers, may result in their being 'unhappy,' and will at once receive stern disapproval from the superintendent, who wants things to run smoothly. It is easier to let the class sit quietly while the 'next boy' reads, than to

classify the children in groups and prepare sufficient busy work to keep the rest of the class busy. The teacher will be 'happier' the old way, and 'things will run smoothly.' The principal who does not stir things up is the 'successful manager,' and becomes the model, which sooner or later the newcomer is bound to follow if he wishes to get ahead.

The idea of paternalism also tends to handicap the principal who wishes to improve the condition of the children. Your young lady who is well connected, who wishes to attend dances and parties, who has little time to prepare charts, lists, drawings, busy work, and the like,—such a one is bothered exceedingly if these are asked for. She does not 'like her prinicpal' and lets every one know this. Again the higher deity steps in to 'fix' matters. The principal is held in check. The school again runs smoothly, but at the same time there is no thorough group work, individual attention to the children is not attempted, and about a third or a half of the class receive any sort of instruction. The rest are 'so stupid,' (said rather coquettishly), 'some may get ahead,' and 'really everything (a word which is seldom worked out in detail) has been tried to get them ahead.' What holds for this aspect of instruction, holds in other lines. Graded work, check tests, careful classification of pupils in the classroom, etc., if these require extra effort, are sure to make teacher unhappy, cause her not to like to teach, and must go to the scrap heap with other ideas and ideals.

When the superintendent is directly elected by a board of education it is a question whether he is really in a position which will enable him to make a scientific course of study. At the outset of his career he may be animated by high ideals, and may be determined to secure high standards, but his environment is against it. His origin is a political one. If he was a student, he must become a 'good mixer,' he must be able to hold pleasant converse with leaders of the church, the club, and society, he has little time to study, to do research work, or to apply modern standards. He can not afford to be looked upon as an agitator, or perhaps as a socialist or anarchist (and this would happen if he attempted things which are considered axiomatic in the academic world), he must run things smoothly, and so he slowly degenerates. Among his own kind, in his political 'crowd' he usually is looked upon as a shining light; but the light is that which academic analysis will show to come from decaying ideals. The course of study, like other things which relate to the welfare of the children, must not be disturbed. Things must go on in the old way. No stir must be made, for this would demand an intensive knowledge, which the political appointee has not. One who might attempt to

establish modern standards and progressive methods would be subjected to a spiritual *auto da fé* which would effect results much like the inquisition of old.

Until the superintendent is selected solely according to merit, determined by fixed standards, until the top of the school system is freed from even the most remote kind of political control, retarded school officials will interfere with effective classroom work, and will in great measure produce retarded courses of study, and retarded children. Furthermore, the superintendent should hold office during good behavior. Until we can read announcements like those given out by the Commonwealth of Massachusetts,—"A public examination of persons wishing to obtain the certificate of approval of the Massachusetts Board of Education for the position of superintendent of schools,"—until such notices become a part of the civil service system there is little hope for a progress sufficient to meet the advance of the times. Education must continue to hobble along, losing ground continually, a reproach to the community, and a scorn and a derision to the bystanders.

VOCATIONAL TRAINING AS A PREVENTIVE OF CRIME.

By G. W. Gayler,

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Youth, as we all know, is the name given to a pretty well-marked stage of human life beginning about the age of fourteen or fifteen and lasting about ten years to the time of complete maturity. The limits of this period are rather indefinite. It is immediately preceded by a year or two of rapid growth and great physical and spiritual change. This short period of change is the time when the boy is at the parting of the ways. He is ceasing to be a child, but is not yet a man. He is in the 'hobble-de-hoy' stage of life. He is just merging into manhood's estate and for the first time he is beginning to see the world from a man's viewpoint.

The body assumes new forms. The muscles develop rapidly, the heart and arteries are enlarged, blood pressure increases, blushing is greatly developed, the voice changes, and is at times beyond control—the whole physical being undergoes a new birth.

The world now takes on new aspects and new life. New interests develop, new friendships are formed. The soul is never so sensitive again. A breath of criticism hurts. A word of commendation helps. The work of the world is now seen in a way as never before, and with this comes the desire and the will *to do*. There is a longing for actual work and a distaste for the preparatory training of home and school.

This is the most vital and difficult of all periods of child life after infancy, most fraught with danger and the severest test of parents and teachers. Because of these changes, because of the value of child life and the danger at this time, the boy or girl now deserves the most careful study, and the most careful handling. There must be expert guidance and supervision to insure that the youth comes through this age successfully. Here is where men and women are made or marred.

Strange to say, it is just the time when in general there is a loosening of the reins of discipline and a lack of general supervision so that the child is now thrown more than ever upon his own resources, often without any guidance whatsoever.

A well-known writer upon educational topics has said, "One of

the blunders of civilized countries, a blunder that has led to an enormous increase in the number of youthful vagabonds and criminals, has been to neglect the adolescent, and to act as though there were a sharply defined line separating the *child* from the *man*, and that it is wise to care for the child systematically up to fourteen and then leave him abruptly and absolutely to the tender mercies of the factory and the street." It is generally considered that the child has arrived at the age of accountability and that he is now able to take care of himself. Because of this he is allowed the greatest freedom in thought and action which may later develop into wrong doing and often leads to a criminal life.

The average home has largely lost its authority over the child at this period. Its power of guidance in many cases is gone. The child goes or comes, works or loiters, attends school or not, as *he* pleases, not as the *parent* wills. Not always is this true,—too often it is. Sometimes parents admit, even in the presence of the child, that their authority is gone and that the child is beyond their control.

The Church has been losing the children at this age, especially the boys. Nothing is there or in the Sunday School which attracts and holds them. It does not make a strong appeal to them. They do not desire to go. No authority says they must, so they remain away. It may be the fault of the boys, it probably is. It may be the fault of the management of the church, at least in part, but the fact remains that something vital is wrong. The grip is loosened. It is almost broken and it is time to take a new hold.

The business world, the community (commercial, industrial, and agricultural) has been too busy making money to care for children. All of us in part, some of us in large part, have been squeezing the dollars and losing the boys and girls. Woe to the community that through a number of years neglects the boys and girls, and puts more value on factory or farm, street or store, than on children and childhood! Of necessity, they will pay for it an hundred fold later in terms of broken lives. We are now in fact reaping the reward, and this is only a prophecy of what will happen if we do not listen to the plea of leaders in the movement to care for the children at this dangerous age.

The school must bear its full share of responsibility for the loss of boys and girls at this stage of life. Studies in elimination show, both in our own schools and throughout the country, that practically 50 per cent of our children leave school at fourteen or immediately after. On the average we are turning out a sixth grade product. Not quite 20 per cent of the boys and girls enter the high school, and less than 4 per cent graduate.

A compulsory school law compels the child to remain in school until the age of fourteen. Before this age there is little desire to leave but with the dawn of adolescence this desire comes, and the bars are thrown down just at the time they should be up and held firmly in place. Practically 100 per cent remain until the age of fourteen—after this very few.

The attitude of school administrators and teachers, until a few years ago was to take care of just those who voluntarily attend school and to give no time and attention to the ones who withdraw. Now a general movement is on foot to care for this large number who leave school soon after the age limit is reached. *We must take care of all the children of all the people.*

Dr. Cooley says, "It is sometimes contended that the responsibility of the public for the education of the masses ends with the elementary school. Those destined for the professions, the executive positions, and the leisure class may enter the public high schools and state universities, and obtain an education leading directly or indirectly to vocational efficiency. Not everyone however seems to be conscious of the fact that the great masses who leave school at fourteen—either from choice or from necessity—to enter into vocational life are entitled to as careful consideration in our educational plans as their more fortunate brothers. As a matter of fact, this great ninety per cent need vocational training and have as good a right to expect it at the hands of the public as their brothers who enter the so-called 'higher vocations'."

What has been the result of the neglect of children by home, State, Church and school during this vital and dangerous age?

The jailer of Cook County in a recent article in a Chicago daily says: "It is the young man that is the criminal of today. Although crime is increasing, the work of the professional crook is on the wane. We don't have the number of confirmed criminals in our jails of today that we had ten or even five years ago, but the number of boys and young women there are increasing every day. Just take our jail here as an example. We have seventy boys who are under twenty-one years of age and they are the fellows that are charged with the daring, violent crimes, too. They will tell you, as they have told me, that they drifted into crime after being street and night loafers. Most of them wanted money to spend to have a good time. They talked things over in a pool room and two or three got together and started to rob."

Chief Justice Harry Olson is quoted as saying in connection with the crime wave which has been sweeping over Chicago, that

youthful criminals are responsible in the main for these crime conditions.

The auto bandits are young men,—the leader gives his age as eighteen. Another is now twenty-five, but he commenced his career of crime eight or ten years ago, and has served time both in the John Worthy School and the Illinois Reformatory at Pontiac. The car bandits of a few years ago were young men scarcely out of their teens. Recently Chicago was shocked by two crimes, one a peculiarly atrocious offense, both committed by mere boys. Within the last year the people of Fulton County have been shocked by murders committed by young men scarcely more than boys. Hardly a day passes that we do not read of some crime committed by a youth in his teens.

In commenting on this condition of affairs one of our metropolitan papers said recently: "These offenses only emphasize the fact which the police and social workers know only too well, that a serious proportion of crime in the great cities of America is committed by youths."

Dr. Cooley in his recent book on "Vocational Education" while discussing the subject of crime of adolescent boys and girls, says that in the interval between 1838 and 1888 crime in general increased 133 per cent in France. The increase was 140 per cent in the case of minors less than sixteen years of age and 247 per cent in the case of minors between the ages of sixteen and twenty-one. He attributes this degeneration chiefly to the decline of apprenticeship, to the lack of adequate vocational guidance and instruction. If vocational education will take care of boys and girls at this dangerous age and in that way lessen crime and the tendency to crime, it is well worth while.

Here are a few examples of head lines taken from the press for a brief period of time: "Ten Thousand Boys Arrested Last Year" (referring to one city); "Four Thousand out of the Six Thousand Arrests Last Year were Boys under Twenty" (referring to a city of less than 150,000); "Bandits Caught Mere Boys" (this is not uncommon from many cities); "Over Half the Murderers Last Year Mere Boys"; "Boy Burglars Getting Common"; "Thieving Increasing Among Children"; "Gangs Generating Thieves."

It seems impossible that there are so many youthful bandits and murderers, but as we scan the papers we find among recent issues enough to justify the assertion that a large percentage of crime is due to the youth in his teens. I quote here from "The Problem of the Children," a pamphlet published by the Juvenile Court of Denver:

"We recall the case of a young man (and it is one of hundreds) who had been in the criminal court and the police court at the age of thirteen. At the age of twenty he shot down a policeman who was heroically performing his duty. And yet suppose at the age of thirteen that boy had been studied, helped, looked after and carefully handled, at twenty would the policeman be maimed for life, or dead, a young wife and child a charge on the community, and a strong, robust young man a charge on the state for life? Perhaps not, and even so we could have felt better about it, and in the sight of God less accountability. Was the state responsible? Yes, even more than the boy, for while he was in jail he was in the plastic stage. The state had him in time and it did nothing—did not even try. The state treated him as a man, dealt with him as a man. They had tried in a day to put a man's head on the boy's shoulders, and in attempting to do this tried what God had forbidden. In this the state was foolish. Just as foolish as if it tried at thirteen years of age to raise him to his full stature."

The state through its system of public schools must assume more responsibility in caring for the youth of the state. In the first place the compulsory school age limit must be raised from fourteen to sixteen so that no child can withdraw from school and spend full time working, either at home or for some employer, before he is sixteen years of age. In the second place provision must be made for the youth who must leave school at sixteen in order to support himself or in order to help support the family. These provisions must be through the establishment of part time schools, special schools running for a short period during each year, and night schools. Along with this must come a change in our course of study so as to recognize both the nature of the youth and the social need of the community—these two things should always determine the subject matter offered. The system of elementary school work for children up to the age of fourteen should be somewhat as it is now but with more emphasis upon the fundamentals, some inspirational and cultural work. These subjects should be simplified, abridged, and adapted. More time should be given to the fundamentals and a less amount of work should be attempted.

Beginning just after the age of fourteen, time and attention should be given to prevocational and vocational work. If boys and girls are to be saved to the school, the work offered must seem worth while to them. It must appeal to them as being worth their time and effort—and to do this it must have some bearing on the practical work outside of school in which they are to engage. The time has

passed in this country when we can fit children into hard and fast grooves and hope to hold them in school. Instead of attempting to adapt the child to the course of study, we must adapt the course of study to the child, or forever lose him.

If we are to hold the youth in school and educate him at least in part, we must consider his newly awakened interests and instincts. Through these only can we hope to give children the culture, the preparation and the training which will make them efficient bread-winners and desirable citizens.

For those who can and will remain in school after fourteen there should be offered as far as possible the six great lines of work leading to the six great avenues of life's activities. Many schools can not offer all of these. If not all, they can offer one, two, or three of them. If it is impossible to offer any, the different subjects can be vitalized, all obsolete and impractical material can be eliminated and the subject can be made to throb with a newness of life never experienced in the old subject. It can be presented so as to be in touch with the life and thought of the modern world.

These six lines as drafted by the Illinois Educational Commission are:

1. A course leading to the speaking and writing professions with language, literature, and history as its main subjects. (We have had these subjects in our course for years. Vocational work along this line is not new.)

2. A course leading to the scientific professions, especially medicine and surgery, and devoting its chief attention to biology, physics, and chemistry, studies dealing with life and the conditions of life.

3. A course leading to the profession of farming with special reference to domesticated animals and plants, and to the soil as the sustainer of life, supported by the physical sciences and by the principles of accounting.

4. A course leading to useful and artistic construction in the building trades and in most lines of manufacture. Here manual training, mathematics, physics, and art should hold the leading place.

5. A course leading to the callings of the business world, with commercial geography, economics, industrial history, commercial arithmetic, commercial law, bookkeeping, stenography and type-writing as its most prominent features.

6. A course dealing with the application of science and art to the affairs of the well ordered home. Here sewing, cooking, food

values, marketing, serving, nursing, sanitation, textiles, home decoration, and the laws of physical, moral, and mental development in childhood are the special studies.

All this means taking care of the boys and girls who can go on with their school life after the compulsory age has been reached. Those who must leave in order to earn money on the farm, in the shop or office,—the ones who have hitherto been neglected and who have contributed largely to that class who have made our criminals,—have not been provided for in this system. This has been and is yet our weakness.

To take care of these children continuation schools in the form of short time, part time, and night schools must be established. For farm boys and girls short term schools of from four to eight weeks during the winter months could be established with special courses in agriculture and domestic science. This can be carried on in connection with grammar and high schools. Groups of students could do some night school work in the rural school buildings during the long winter evenings.

In the part time school the pupils work a part of the time and go to school a part of the time. Sometimes this is arranged so that the pupils attend school one week and work the next week. It is sometimes arranged that the student attends school from six to ten hours a week, the employer giving him time off, and in some cases paying for the time spent in school.

In the courses of study at this age practical work looking toward a vocation in life must be the center. The cultural aim, the idea of preparation for college, must be abandoned for all but a very small number of children. This does not mean that all subjects looking toward citizenship are to be abandoned. It means that the child is to be allowed and encouraged more than ever to choose what he should study in the light of what he desires to do after his schooling is over. In this way only, it seems to me, will the boys and girls be held in school during this vital and dangerous age from fourteen to twenty.

It is high time that some organized efforts in all the various social institutions were made to care for boys and girls who are passing through this vital and dangerous age. There needs to be an awakening in the home so that it will give that protection and training which the home from its very nature must give. The Church must do very much more for boys and girls of this age than it ever has done in the past, both in a social way and in a moral and religious way. The missionary spirit must permeate the Church to such an extent that

it will feel the responsibility of caring for the boys and girls of the community whether these children belong to its little group or not. The school,— and here lies the larger work,—must also be missionary in its spirit, and see to it that some effort is made to hold boys and girls in school both by making school life more attractive and more worth while, and by reaching out and helping those who by force of circumstances must leave school early in order to take up the struggle of life.

REVIEWS AND CRITICISM.

When to Send for the Doctor and what to do before the Doctor Comes. By Frieda E. Lippert, M.D., and Arthur Holmes, Ph.D. Philadelphia and London: J. B. Lippincott Company, 1913. Pp. 265.

Instead of attempting to enumerate the various classes of people to whom this book will be valuable, it is far easier and more accurate for the reviewer to say at once that there is hardly anyone,—excepting possibly the physician and his right hand, the trained nurse,—who does not have need for it. Mothers first of all are the ones for whom it was written, and if mothers, why not fathers too? Are they not often enough called upon to give aid in a sudden illness of a child, and to settle the urgent question, "Hadn't we better send for the doctor?" No less than parents would teachers, social workers and nursery governesses do well to get by heart the simple rules for detecting signs of ill health in a child and learn to distinguish between contagious and non-contagious, trifling and serious maladies.

The illustrations are well chosen and bring out with beautiful clearness the points to be observed. The text is equally clear, and is divided into chapters and sections with headings which make it easy to trace down a symptom and find its significance. Part I deals with "Simple Non-contagious and Contagious Diseases," and its ten chapters are on "Baby's Cries," "Colds," "Sore Throat," "Fevers," "The Sick Stomach," "Bowel Troubles," "Headache," "Skin Eruption," "Contagious Febrile Diseases," and "Contagious Diseases of the Eye". Part II is on "Simple and Serious Nerve Disorders," Part III on "Some Habits of Childhood," Part IV on "Physical and Mental Causes of Retardation," including the common physical defects and special defects of hearing, teeth, speech, and posture. Part IV, "What to do before the Doctor Comes," contains brief and definite directions for the prompt treatment of wounds, burns and scalds, loss of consciousness, fractures, dislocations, sprains, and poisoning.

Where so much that is useful is included, one is led to wonder why yet another chapter was not given a place. A few words on the hygiene of adolescence and its emergencies would have added greatly to the value of this book.

The volume closes with a very complete index, making it possible to refer in a moment to any topic on which information is wanted, whether it be the incubation period of measles, a home remedy for colic, the proper temperature of a living room, or the way to prepare an antiseptic dressing for a wound.

Both Dr. Lippert and Professor Holmes, it is almost unnecessary to say, have had long and ample experience with exceptional as well as normal children. Their advice is sound and easy to follow, and will surely help in the saving of lives that are endangered in the many crises of childhood.

A. T.

The German System of Industrial Schooling. By Ralph C. Busser, LL.B. Phila.: Public Education Assn., 1913 (Study No. 40). Pp. 64.

"Have we not in America erred in turning out too many youths 'educated' just beyond the point where they are willing to work with their hands, and where they are inclined to prefer the 'genteel' clerkship to the better paid and more valuable labor of the trained mechanic or the farmer?"

It is with this significant remark that Mr. Ira Jewell Williams in a preface calls attention to the evident lack in present-day American education, and to the way out as shown by the Hon. Ralph C. Busser, Consul at Erfurt, Germany, in his careful analysis of "The German System of Industrial Schooling".

The question here propounded has divided the educational forces of the day into two camps. One group of the Old Guard, firmly entrenched behind the bulwark of "culture and discipline," struggle for "things as they are"; on the other side a mixed band of scientific experts, progressive educators, and individual faddists raise the cry for "practical education to meet individual needs". These progressives do not present a united front. Many vital problems have scarcely been clearly defined, much less have they been put in the way of solution.

Shall practical education or the new industrialism begin with the kindergarten and run through the high school, shall it be postponed until the high school period, or shall it be introduced in the seventh or eighth grade with a junior high school?

Is the purpose of industrial education that of training the brain or of giving skill to the hand?

Is it the province of the public school to supplant apprenticeship and develop journeymen?

Shall the school fit workmen for the industries as they are, or must it change industry to fit the child?

Shall the school provide equipment sufficiently broad to meet the needs of a multiform industry, or shall it retain its older function of giving the tools of learning and correlate part-time service with practical shop work?

Is it just and right for adolescent manhood to add three hours of academic work to eight hours of toil?

Shall "practical education" be given as a definite part of the public school system or under an entirely separate management? Shall it be compulsory or elective? Are such schools to be established by federal aid or purely by local initiative?

These are questions which are agitating the minds of thoughtful educators to-day. Such questions show that the spirit of discontent has passed the point of random criticism of our schools and has begun to apply constructive scientific tests of method. It has passed the "what" and come to the "how".

This spirit of educational unrest, of seeking for practical results, is at least a quarter of a century old in America. Early attempts to solve the problem led to manual training courses which proved to be only a "mustard relish" with which to administer the ancient educational pabulum. In Germany the same spirit of unrest, beginning a generation earlier than in our country, has produced proven results through a broadly developed system of industrial training.

To this German system of practical training, of trade schools, continuation schools and technical schools, progressive thinkers turn for the materials from which to build a new American education. No foreign system can be adopted. It must be adapted to conditions which prevail only in an industrial democracy; but that it has pointed the way can be seen from recent developments in Massachusetts, Ohio, Wisconsin and other commonwealths.

Mr. Busser brings to this subject the viewpoint of an American business man, a member of the Philadelphia bar, and presents in condensed form a definite analysis of the German system as a whole. From his close acquaintance with the business requirements of this country, as well as with the intimate workings of the German Government, Consul Busser has sources of information which but few have been able to reach, and his contribution is a valuable gift to the literature of the subject of industrial education.

Germany has realized that in order to meet the growing menace of foreign competition, especially in countries like the United States, she must rely not on her natural resources and the cheapness of labor, but upon the skill and technique of her workers. To accomplish this, as well as to meet the needs of the factory system, which substitutes machinery for hand labor, she has developed besides day schools, technical schools and universities, in nearly every city organized evening and Sunday classes for the training of artisans in the various trades practiced in the community.

This system Mr. Busser treats under the heads of general trade schools, special trade schools, engineering and scientific schools, and vocational schools for girls, and shows the relation of each of these schools to the development of the national industries.

Of the relation between these schools and the government, Mr. Busser says: "The industrial schools in most German cities and towns form part of the public school system, and as such are supported by the respective municipalities, usually receiving aid from the State, and sometimes from the manufacturers and trade guilds especially interested. The appropriations of the German state governments to the industrial continuation schools vary from one-third to two-thirds of the expenditures, not including the cost of rooms, heating, lighting, and janitor service, which is met by the local community. In Prussia the proportion contributed by the State depends largely upon the size and financial condition of the community—to the larger cities with more than 60,000 population not more than one-third and to the smaller cities from one-half to two-thirds of the total outlay exclusive of the buildings and their operating expenses. The total expenditures in Prussia for the industrial continuation schools amounted in 1911 to $2,304,792, of which 52 per cent was borne by the municipalities, 35 per cent by the State, 2 per cent by associations and guilds, and 11 per cent by employers' contributions consisting of the tuition fees which they are bound to pay for their employes, together with the sum which some of them donate voluntarily."

The general trade schools, the author says, "embrace the *industrial continuation schools* or part-time schools for young people between the ages of fourteen and seventeen who have finished their general education in the common schools and are employed in the industries as apprentices, helpers, or other

manual workers; the *mechanics' schools*, with Sunday morning and week-day evening classes for the technical and theoretical instruction of journeymen; and the *industrial art schools* for the better education of artisans and mechanics in the theory, art and technique of their respective crafts.

"The course in the common schools of Prussia covers eight years, upon the completion of which the compulsory period of *full-time* schooling ends. As a rule however compulsory education does not then entirely cease, for in most cities and towns German boys are required to attend the continuation school for six or seven hours per week during three years, that is usually between the ages of fourteen and seventeen. The boys who have entered as store or office employes upon a business career, attend the commercial continuation school; those who have taken up an industrial vocation as trade apprentices, factory workers or otherwise, attend the industrial continuation school. Naturally, the industrial continuation school can reach its full development only in the large cities, where a special organization in ascending single-trade classes is possible. However in the smaller cities and towns good results are also being accomplished when, as is now almost everywhere the case, related trades (for example, the apprentices of the various building trades) are grouped together in classes.

"In selecting the subjects of instruction the aim is to serve the civic, vocational and economic interests of the apprentices and cultivate in them the technical knowledge, artistic sense and idealism that with the necessary mechanical skill and practical experience go to make the master craftsman."

The most difficult task of the German industrial continuation schools has been the planning of the instruction for the unskilled workers. In the selection of studies for this class of boys, the chief aim is to enable them to learn the principles governing their industrial environment and the means by which they may advance themselves economically, and at the same time to broaden their general education. The boy is taught to understand his position in the working community and the general facts about the workshop, the care of his health and the proper use of his spare time. Simple courses in domestic and industrial bookkeeping and other business studies suited to his position in life are given, so that the student may become a good citizen as well as an expert worker.

Besides these general schools for unskilled workers, there are various grades of schools for different types of skilled workmen. In many cities, the industrial art schools, which are virtually higher trade schools for master workmen, foremen and managers, give more technical courses. "Here the aspiring artisan or mechanic can study the scientific principles and art rules of the industry which he has entered and cultivate ideas of grace and beauty which can be combined with utility, so that his work may be scientifically planned, expertly designed, economically and skillfully executed. This instruction in technics and applied art provided for the craftsmen in practically every German city of industrial importance has exercised great influence not only in increasing the efficiency of the skilled workers but in stimulating their inventive faculties. This is demonstrated by the lavish display of countless beautiful conceptions of industrial art in store windows everywhere in Germany; and thousands of wholesale buyers from other parts of Europe and [illegible]a come here every year

to lay in a stock of artistic wares and latest holiday goods of German manufacture."

These schools give both day and evening courses. A student may take a year or two off when he can afford to give his whole time to study, or he may take partial courses either in the day time or at night. The evening classes constitute the mechanics' school, the object of which is to provide practical courses for skilled workers who require advanced technical instruction not given either in the industrial continuation school (which they attended during their appreciceship) or in the industries where they are employed.

The program of studies in these mechanics' schools relates especially to the distinctive industries of each particular locality. For example, the Mechanics and Industrial Art School in Barmen pays particular attention to cabinetmaking and the lithographic industries; the school in Elberfeld to metal-working and bookbinding; the one in Düsseldorf to the building trades and landscape-gardening; in Erfurt to shoemaking, printing, lithography, bookbinding and cabinetmaking.

"Special schools exist in Germany for almost every trade known to the industrial world, and they have in no small degree aided in the thorough equipment of German workmen for their respective trades, to which is so largely due the marvelous development of the country's industries, and the consequent rapid spread of material prosperity and well-being, in spite of the heavy burden of state and local taxation."

Prominent among them are those connected with the textile industry, where the necessity for special technical kuowledge and the acquisition of high skill in hand work, as well as in the operation of the complicated machinery of the trades, led to the establishment of special schools for spinning, weaving, knitting, rope making, dyeing, finishing, ribbon and lace making, embroidering, etc.

Other important institutions which substitute school for apprenticeship in whole or in part, are the special schools for the metal trades, clock and watch making, basket making, straw plaiting, pottery, woodworking, etc.

The schools for builders (for the education of architects, masons, and carpenters) were the earliest developed of the German special trade schools. They were first organized as departments of drawing schools, industrial art and continuation schools, but with the growing complexity of the building trades and the progress in technical knowledge, it was found necessary to erect separate buildings and to establish more elaborate curriculums, and to develop master-builders and master-masons as well as to prepare artisans.

The highest class of technical instruction is given in the technical high schools, the schools of technology, and the mechanical engineering schools, and it is from these schools that Germany draws her constructing and supervising engineers in the larger machine shops, and her foremen, superintendents and managers in the foundries and factories. Contrary to our American nomenclature, the most advanced grade of technical instruction is given in the *Hochschule* or Technical High School.

The special trade schools have their own entrance requirements, according to conditions in the respective industries. If the school aims to take the place of apprenticeship in whole or in part, the only condition is usually the com-

pletion of the eight years course in the common schools (*Volksschulen*). But if it be an advanced trade school, designed to supplement the learning of the trade under the apprenticeship system, then one or two years practical experience is required.

The Prussian Minister of Commerce and Industry issued a decree in 1912 recommending that in future the industrial art and mechanics' schools should as a rule admit as full students only such young people as have had as a foundation at least two years practice in the particular industry. Previous to this, the completion of an actual apprenticeship had already been established by many schools as a condition precedent to entering as a full course student, and in some as much as three years actual employment in the trade is required.

Thus the German continuation schools are distinctly for Germans. The skilled mechanic intends to keep his skill for himself and his fellow workmen. He leaves the unskilled work for the immigrant, and does not intend that the foreigner from America or elsewhere shall come in and secure training in his specialty, except under rare and difficult conditions. The annual tuition fees range from $7 to $47 for Germans, but foreigners must pay as high as $250 per term. In some districts this distinction is even carried so far as to discriminate against workmen from other parts of the German Empire, and some schools exclude foreigners entirely. German education is distinctly "made in Germany" for Germans.

It is generally understood that German women do not receive the same consideration from men that is accorded their American sisters. Naturally their educational progress is far behind that of the men. Indeed it has only been within the last half century that the German women have had any considerable opportunity for training in skilled trades or in the broader duties of the home. Since 1860 schools have been established for the special training of women. At first these schools gave courses only in sewing, cooking, and serving, but more recently the wider fields of household economy and management have been introduced. Today there are special trade schools for milliners, dressmakers, hairdressers, art embroiderers, lace makers and other textile handworkers. Of these special trade institutions the most important are the textile schools, because the corresponding industries employ a large number of women, who work alongside of the men in the making of suits, underwear, gloves, lace, trimmings, and other textile goods.

Many of the continuation and trade schools hold interesting local or provincial exhibitions several times a year, and there are also in different parts of the Empire workmasters' courses and experimental shops which supplement the system of industrial education. Other features such as concerts, lectures, games, classes of various kinds, and excursions to places of industrial and historic interest make of the continuation school a valuable social institution, extending its influence, both in working and recreation hours, practically to the end of the formative period of the boy's life.

Private industrial schools, organized and managed for profit, are comparatively rare in Germany. The continuation schools, mechanics' and industrial art schools are usually conducted by the local authorities, the State having certain rights of supervision and control when it shares with the municipality the

expenses of operation. The special trade schools are conducted by the municipality or else by the guilds or other industrial associations concerned with the particular trade taught. These latter schools frequently receive appropriations from local or state government after complying with certain requirements.

As a result of these unifying influences there is now systematic relation in entrance requirements, courses of instruction, etc., in German industrial schools of the same kind, and students in one state can be admitted to equivalent schools in other states of the Empire.

The special trade schools are generally located in the localities where the corresponding branches of industry flourish. The institution is thus made conveniently accessible to the workers and can avail itself of the services of experts direct from the appropriate factory or workshop. On the other hand the industry is constantly reinforced by trained recruits, bringing new methods and processes. The relation between the school and the factory is a reciprocal one, with distinct benefit to both.

Thus Germany has organized a most full and complete system of training for her artisans. Practically every skilled trade throughout the Empire can count upon thoroughly trained recruits to fill the places of those who drop out, and to add for future growth. By this means the industries of the nation are fostered and as they believe, the industrial supremacy of the nation is assured.

There still remains one question to be answered: Is the independence and the future development of the individual members of the State as carefully sought and as efficiently safeguarded as that of the industries and of the Empire? The American school system stands for independence and for the initiative of the individual. To carry every man and woman, not as dependents but through the free coöperative activity of each with all, on towards personal independence and social and industrial efficiency, is a far more difficult task than to enforce success through military standards of discipline. This is the problem which American education must face.

And yet we may look to Germany,—to Bismarck—for the watchword of the day,—"The nation that has the schools has the future."

JAMES S. HIATT,
Secretary Public Education Association

NEWS AND COMMENT.

Schools as Social Centers.

Superintendent Randall J. Condon of Cincinnati, Ohio, submitted to the Committee on Social Centers of the Board of Education at a meeting held March 17, 1913, a report which is at once so comprehensive and so practical as a plan for constructive social work, that it has been summarized and widely distributed by the Cincinnati Bureau of Municipal Research. Superintendent Condon says in part: A larger use of the school house for social, recreational, educational and civic purposes should be encouraged. The school houses belong to all the people and should be open to all the people upon equal terms:

As Civic Centers.

For the free discussion of all matters relating to local and city improvement and for the non-partisan consideration of all civic questions.

As Recreational Centers.

Especially for the younger members of the community; to include the use of the baths and gymnasiums; for games, sports and other physical recreations; the use of class rooms and halls for music, dramatics and other recreational activities; and for more distinct social purposes.

As Educational Centers.

In which the more specific educational facilities and equipment may be used by classes or groups of younger or older people in any direction which makes for increased intelligence and for greater economic and educational efficiency.

As Social Centers.

In which the community may undertake a larger social service in behalf of its members;—stations from which groups and organizations of social workers may prosecute a non-partisan and non-sectarian work for the improvement of the social and economic conditions of the neighborhood; rendering any service which may help to improve the condition of the homes; giving assistance to the needy; disseminating information; helping to employment; and in general affording the community in its organized capacity an opportunity to serve in a large measure the needs of its individual members.

The entire movement should be under the direction of a social secretary or director to be appointed by the Superintendent. Until such an official is appointed, principals should be allowed a large amount of freedom and initiative in developing plans. Where parents' organizations or local improvement societies exist, they should be utilized in this work instead of creating separate and additional organizations. Until the neighborhood organizations have been perfected, requests from existing clubs and organizations may be granted; but they should come through the principals and should be transmitted with their approval or disa[illegible] Committee o[illegible]. These requests

when granted should be without expense to the club or the organization or to the members, under the following conditions:

1. No school should be opened for the special use of any class or group having less than twenty-five members.

2. It should not be opened upon more than one evening a week for a membership of less than fifty.

3. A smaller number, however, may be granted the use of certain rooms in a school which is open for other purposes, providing this smaller number does not deprive a larger group of the same opportunity.

4. No group should be allowed the use of a room for more than two evenings a week if the room is desired by other groups. If there is a sufficient number of requests, each group may be limited to a single evening in the week.

5. No use of the gymnasium, manual training and domestic science rooms, or other rooms where the apparatus and equipment call for special skill, intelligence, or care in their manipulation should be permitted except under the direction of a leader appointed by the Superintendent of Schools, or by some official designated by him for this purpose.

6. Permission should not be granted to any exclusive sectarian or partisan organization for purposes of sectarian or partisan propaganda or for the discussion of such matters; but permission may be granted to such organizations to use rooms and equipment for non-partisan and non-sectarian social, civic, recreational, or educational purposes when the purposes for which such use is desired and the plans of the organization have been submitted in writing to the Committee on Social Centers and have received their approval.

7. All organizations, however, which are in any way exclusive in their membership should be granted such permission upon the express condition that such use shall not interfere in any way with a similar use by a non-exclusive organization. Whenever there is a conflict of interests, the decision should be in favor of the latter organizations.

The consideration of social center work was made a special order of business for 9 P. M., at the meeting of the Board of Education of Cincinnati on Monday, March 31, 1913.

The School Inquiry Movement.

The New York Bureau of Municipal Research reports that the school inquiry movement is gathering in volume and velocity. "Wisconsin learned her rural school needs," says the Bureau, "through a survey of rural schools, and legislative action for reconstruction is under consideration. Wisconsin learned that she had some untrained teachers, and is at present having a survey of her normal schools in order to determine why.

"Ohio's state-wide survey of her public school system is under way. The recent floods changed a few plans but have not stopped the work. This survey affects directly and immediately the welfare of 900,000 children, the efficient expenditure of $30,000,000 annually, and the operation to the best advantage of a $75,000,000 plant.

"Texas has just offered the following resolution to the legislature through the executive board of the Conference for Education:

"'We believe that the efficient system of schools guaranteed to the people of Texas by the state constitution demands expert supervision, and we therefore favor the extension of country supervision to all counties having 2000 or more scholastic population, and the grouping of remaining counties that have fewer than 2000 scholastic population into supervisory districts under the direction of professional school men.' As a means of obtaining more efficient county supervision, as demanded in the state democratic platform, the executive board of the conference has declared in favor of the election of the superintendent by the county board of education, *not restricting the election to a resident of the county where the election is held.*

"Missouri has provided legislation for examination of her schools by a special commission."

Among the cities which have already undertaken or are preparing to begin a survey of the school system are St. Paul, Portland (Oregon), Milwaukee, Cincinnati, New York, Atlanta, and Schenectady.

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CURRICULUM MAKING.

By William E. Grady,

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The recent volcanic outburst of criticism from expert investigators and intelligent laymen against the New York elementary school course of study must be rather startling to those pedagogues within the system who are fond of assuming that because there is a tacit or open acceptance of a well buttressed traditional point of view or of certain orthodox pedagogical principles on the part of the supervising officials, routine administration and teaching will necessarily conform to those principles. The source of much evil is in the assumption that the common acceptance of valid general principles necessarily insures sound practice. It should be patent that because of the tendency to read different contents into general statements, supervisors who cannot be accused of insincerity condone educational practices so widely variant that at first glance it would be absurd to believe they were acting upon the same controlling ideas.

In a recent discussion the following positive statement was offered as a criterion for the selection of curriculum material,—"Those accumulated habits, experiences, ideals, and standards of the race which are reasonably comprehensible to elementary school children and which are most essential in promoting effective social functioning under current social conditions, should be provided for in the course of study in such a way as to secure the maximum of individual development, physically, intellectually, æsthetically, and ethically."

The phrase, "effective social functioning under current social conditions" ought to satisfy any philosophical critic who is fond of deductive procedure and who loves a well balanced, euphonious statement. But despite the influence of such ideas, our practice is defective largely because we do not follow an inductive procedure which would supply us with scientific data showing just what local conditions are. Many of our problems should be discussed not in terms of the pupil in school, but in terms of the pupil not in school.

TABLE I.

Occupation.	Totals. Years employed 14 — Boys.	Totals. Years employed 14 — Girls.	Totals. Years employed 16 — Boys.	Totals. Years employed 18 — Girls.	Grand Totals. Boys.	Grand Totals. Girls.	Grand Totals. Total.
OCCUPATIONS HAVING MORE THAN 10,000 WORKERS.							
Housework	1	8,693	1	9,583	2	18,276	18,278
Errand Boys and Girls	6,366	661	6,163	561	12,529	1,222	13,751
Clerks	2,122	795	7,023	2,191	9,145	2,986	12,131
OCCUPATIONS HAVING MORE THAN 5000 WORKERS.							
Office Boys and Girls	3,551	667	4,442	1,109	7,993	1,776	9,769
Helpers	1,807	577	3,144	793	4,951	1,370	6,321
OCCUPATIONS HAVING MORE THAN 1000 WORKERS.							
Machine Operators	367	1,236	859	2,380	1,226	3,616	4,842
Packers and Wrappers	331	1,453	727	2,106	1,058	3,559	4,617
Idle	1,793	34	2,053	73	3,846	107	3,953
Stenographers and Typists	115	563	471	2,681	586	3,244	3,830
Salesmen and Saleswomen	201	605	1,088	1,823	1,289	2,428	3,717
Not Known	877	471	1,440	898	2,317	1,369	3,686
Messengers	1,117	156	1,358	79	2,475	235	2,710
Stock Boys and Girls	364	388	1,003	863	1,367	1,251	2,618
Bookkeepers	107	222	717	1,142	824	1,364	2,188
Dressmakers	—	605	2	1,384	2	1,989	1,991
Seamstresses	—	587	—	1,105	—	1,692	1,692
Feather Workers	13	551	32	1,050	45	1,601	1,646
Shirt and Waist Makers	33	421	90	919	123	1,340	1,463
Millinery	6	436	11	984	17	1,420	1,437
Wagon Boys	433	—	920	—	1,353	—	1,353
Telephone Operators	59	223	161	844	220	1,067	1,287
Outer Clothing Workers	57	228	204	645	261	873	1,134
Paper Box Makers	73	354	192	495	265	849	1,114
Drivers	251	—	853	—	1,104	—	1,104
Printers	278	9	751	36	1,029	45	1,074
Tailors	159	88	613	178	772	266	1,038
OCCUPATIONS HAVING MORE THAN 500 WORKERS.							
Embroidery	29	310	62	483	91	793	884
Cash Boys and Girls	93	407	63	231	156	638	794
Cashiers	18	169	78	529	96	698	794
Bookbinders	72	202	130	325	202	527	729
Servants	14	273	32	362	46	635	681
Machinists	139	1	445	—	584	1	585
Neck Wear	11	114	50	349	61	463	524
Vendors	202	15	284	13	486	28	514
Artificial Flowers	21	161	225	298	46	459	505

The pupil who passes into and remains in our secondary school frequently because of sheer inertia, is an educational aristocrat whose salvation is really of less concern than that of the pupil whose "university training" begins and ends in the elementary school. This truth becomes significant when we recall that although this city spends approximately $36,000,000 a year on its school system, only recently have the educational authorities obtained definite data showing the occupation of New York City children between the ages of fourteen and eighteen.

On page 58 is a partial tabulation of the data collected by Mr. George H. Chatfield, Secretary of the Permanent Census Bureau of the City of New York, in an investigation covering 140,000 workers out of a possible maximum of 250,000. Mr. Chatfield adds, "There is rarely a community of large size in the land, . . . that has evidence as to the success or failure of those who leave school, or indeed has definite knowledge of the conditions in actual life which these children must meet,—in consequence the criticisms have been difficult to meet except by unconvincing generalizations. The knowledge of the critics is no more accurate, and no thoroughgoing reform will result from reliance on mere opinion."[1] Surely these facts together with the amazing conditions revealed by recent industrial investigations in this city and in Chicago should give new significance to the term, "current social conditions".

If we interpret this statement from a still broader standpoint and assume, as statistics show, that farming and housekeeping are the two types of occupation in which the bulk of our people are engaged, have our schools throughout the country accepted the implication that thinking and doing, book study and practical application, theory and practice go hand in hand in the world at large and therefore should always go together in the various phases of school work? Our curricula and teaching processes are in the thrall of an intellectualistic psychology which does little for that type of pupil,—and our whole industrial life would seem to indicate that they are in the majority,—whose interest is to do, to make, to think not in a Platonic fashion but in relation to the pressing concrete problems of practical life. We are apt to forget that the pupil who in terms of intensive book study may display initiative, sound judgment, and coherent organization of thought, frequently fails to show any of these characteristics in the ordinary but urgent situations of the playground, the street, the home, or the occupation. The present extension of vocational training marks only the initial stage of pub-

[1] Quarterly Publications of American Statistical Association, Sept., 1912.

lic appreciation of the point of view long since expounded by Pro fessor John Dewey:

"The education of the human race upon the whole has been gained through the occupations which it has pursued and developed. The vocations, the professions, the lines of activity which have been socially evolved have furnished the social stimuli to knowledge and the centres about which it has been organized. If occupations were made fundamental in education, school work could conform to the natural principle of social and mental development. . . . It is a serious error to think of occupational activities as if they were merely of prosaic utilitarian or even commercial worth. Their primary value is educational. It consists in training the thinking of boys and girls in connection with things that appeal to them as worth doing. . . . It includes a broad and liberal scheme of knowledge, for all typical social occupations rest upon scientific insight and information. . . . An adequate mastery of the typical occupations brings the pupil to a study of the social conditions and aims of the present; to facts which when classified form sociology, economics, civics, and politics. The fine arts are naturally included—in short there is nothing of science, history, or art which the educational experience has shown to be of worth, which an occupational education would not include." [2]

There is little scientific basis not only for the content of curricula as at present organized, but also for the amount which the average pupil is supposed to master before he can graduate or be eligible for advancement to a higher type of school. Is it not a fact that venerable tradition or the personal opinion of superintendents as to what a child should know is usually taken as a standard, in place of the inflexible limits imposed by the native ability of the pupil and his social environment? New York City for example has a maximum uniform course of study covering eight school years, which in its fundamental features has varied little in response to the stupendous changes of recent years due to the influx of European immigrants.

The following table has been adapted from Payne, "Public Elementary School Curricula". It shows the curriculum of the Public Elementary Schools of New York City for the years 1868, 1888, 1904, and 1912, and also the percentage of total time devoted to each subject in the respective years.

[2] Dewey, John. Bearings of Pragmatism on Education. *Progressive Journal of Education.*

TABLE II.

CURRICULUM OF PUBLIC ELEMENTARY SCHOOLS OF NEW YORK CITY, 1868, 1888, 1904, 1912.

Subjects.	Year 1868 Grades										Year 1888 Grades										
	1	2	3	4	5	6	7	8	Total	Per cent	1	2	3	4	5	6	7	8	Total	Per cent	
1. Opening Exercises	*	*	*	..	..	..	..	..	..	..	...	...	...	...	...	...	...	...	....	....	1
2. Physical Training, Physiology	..	..	..	..	..	..	..	..	..	..	...	...	...	...	...	...	...	...	....	....	2
3. Arithmetic	*	*	*	*	*	*	*	*	..	..	240	240	240	180	180	180	180	180	1620	13.5	3
4. Geography	..	..	..	*	*	*	*	*	..	..	...	...	60	60	40	40	...	...	200	1.6	4
5. History and Civics	..	..	..	..	..	..	*	*	..	..	...	...	...	40	40	40	40	...	160	1.3	5
6. Writing, Penmanship	*	*	*	*	*	*	*	*	..	..	120	120	120	120	120	120	120	120	960	8.0	6
7. Language, English	..	..	..	..	..	..	..	..	..	..	a	a	a	a	a	a	a	a	....	....	7
8. Punctuation	*	*	*	*	..	..	..	..	..	..	...	...	...	...	...	...	...	...	....	....	8
9. Grammar	..	..	..	..	..	*	*	*	..	..	360	360	360	300	300	300	300	300	2580	21.5	9
10. Composition	..	..	..	..	..	..	..	*	..	..	a	a	a	a	a	a	a	a	....	....	10
11. Spelling	*	*	*	*	*	*	*	*	..	..	a	a	a	a	a	a	a	a	....	....	11
12. Reading	*	*	*	*	*	*	*	*	..	..	a	a	a	a	a	a	a	a	....	....	12
13. Elementary Science	*	*	*	..	..	..	..	..	..	..	...	...	...	...	...	...	...	...	....	....	13
14. Nature Study	*	..	..	..	..	..	..	..	..	..	...	...	...	...	...	...	...	...	....	....	14
15. Drawing, Construction	..	..	..	..	..	..	..	..	..	..	30	30	30	40	40	40	40	40	290	2.4	15
16. Manual Training, Cooking, Sewing, Raffia	..	..	..	..	..	..	..	..	..	..	...	...	...	...	...	...	...	...	....	....	16
17. Music	..	..	..	..	..	..	..	..	..	..	25	25	25	50	50	50	50	50	325	2.7	17
18. Elective	..	..	..	..	..	..	..	..	..	..	...	...	...	...	...	...	...	...	....	....	18
19. Unassigned time	..	..	..	..	..	..	..	..	..	..	725	725	725	730	730	770	770	810	5885	49.0	19

(Continued on following page)

TABLE II. (CONTINUED)

CURRICULUM OF PUBLIC ELEMENTARY SCHOOLS OF NEW YORK CITY, 1868, 1888, 1904, 1912.

Subjects.	Year 1904										Year 1912										
	1	2	3	4	5	6	7	8	Total	Per cent	1	2	3	4	5	6	7	8	Total	Per cent	
1. Opening Exercises	75	75	75	75	75	75	75	75	600	5.0	75	75	75	75	75	75	75	75	600	5.0	1
2. Physical Training, Physiology	210	165	165	165	90	90	90	90	1065	8.9	450	165	165	150	90	90	90	90	1290	10.8	2
3. Arithmetic	120	150	150	150	150	200	160	160	1240	10.3	120	150	150	150	150	200	200	200	1325	11.0	3
4. Geography	...	...	...	135	120	120	80	..	455	3.8	...	...	...	135	120	120	120	...	495	4.1	4
5. History and Civics	...	...	...	...	90	120	120	120	450	3.8	...	...	...	...	90	120	120	120	450	3.8	5
6. Writing, Penmanship	100	125	125	75	75	75	...	...	575	4.8	100	125	125	75	75	75	...	...	575	4.8	6
7. Language, English	450	510	450	375	375	375	360	320	3215	26.8	450	510	450	375	375	375	360	320	3215	26.8	7
8. Punctuation	60	60	60	60	60	60	...	...	360	3.0	*c*	*c*	*c*	*c*	*c*	*c*	*c*	*c*	....	....	8
9. Grammar	*b*	*b*	*b*	*b*	*b*	*b*	*b*	*b*	....	....	*c*	*c*	*c*	*c*	*c*	*c*	*c*	*c*	....	....	9
10. Composition	*b*	*b*	*b*	*b*	*b*	*b*	*b*	*b*	....	....	*c*	*c*	*c*	*c*	*c*	*c*	*c*	*c*	....	....	10
11. Spelling	*b*	*b*	*b*	*b*	*b*	*b*	*b*	*b*	....	....	*c*	*c*	*c*	*c*	*c*	*c*	*c*	*c*	....	....	11
12. Reading	*b*	*b*	*b*	*b*	*b*	*b*	*b*	*b*	....	....	*c*	*c*	*c*	*c*	*c*	*c*	*c*	*c*	....	....	12
13. Elementary Science	...	...	...	...	...	...	80	80	160	1.3	...	...	...	...	...	...	80	80	160	1.3	13
14. Nature Study	90	90	90	75	...	...	...	...	345	2.9	90	90	90	90	75	...	...	...	435	3.7	14
15. Drawing, Construction	160	160	160	120	120	120	80	80	1000	8.3	120	120	120	120	120	120	80	80	880	7.3	15
16. Manual Training, Cooking, Sewing, Raffia	...	...	...	...	...	...	80	80	160	1.3	30	30	60	60	60	60	80	80	460	3.8	16
17. Music	60	60	60	60	60	60	...	...	360	3.0	60	60	60	60	60	60	60	60	480	4.0	17
18. Elective	...	...	...	...	...	...	(200)	...	200	1.7	...	...	...	...	...	...	(200)	...	200	1.7	18
19. Unassigned time	175	105	165	195	210	205	275	235	1565	13.1	...	175	205	210	210	205	235	195	1435	12.0	19

Under 1868 * indicates subject was taught.

Under 1888 subjects marked *a* were included under the subject Grammar.

Under 1904 subjects marked *b* were included under the subjects Language–English.

Under 1912 subjects marked *c* are included under the subject English.

Table for 1868 compiled from Barnard's *American Journal of Education*, pages 469–576.

Table for 1888 compiled from the United States Commissioner's Report 1888–1889 vol. 1, pages 369–411.

Time not specifically assigned for 1868 and 1904 has been marked "unassigned time".

In calculating percentages the total time devoted to a subject in the eight years' course was divided by eight times 1500 or 12,000.

Tabulating totals for the purpose of comparison we have the following:

	1888		1904		1912	
	Min.	Per cent.	Min.	Per cent.	Min.	Per cent.
1. Opening Exercises	....	....	....	5.0	600	5.0
2. Physical Training, Physiol.	....	....	1065	8.9	1290	10.8
3. Arithmetic	1620	13.5	1240	10.3	1325	11.0
4. Geography	200	1.6	455	3.8	495	4.1
5. History and Civics	160	1.3	450	3.8	450	3.8
6. Writing, Penmanship	960	8.0	575	4.8	575	4.8
7. Language, English	....	....	3215	26.8	3215	26.8
8. Punctuation	....	....	360	3.	....	....
9. Grammar	2580	21.5	....	....	....	....
10. Composition	....	....	....	....	....	....
11. Spelling	....	....	....	....	....	....
12. Reading	....	....	....	....	....	....
13. Elementary Science	....	....	160	1.3	160	1.3
14. Nature Study	....	....	345	2.9	435	3.7
15. Drawing, Construction	290	2.4	1000	8.3	880	7.3
16. Manual Training, Cooking, Sewing, Raffia	....	....	160	1.3	460	3.8
17. Music	325	2.7	360	3.0	480	4.0
18. Elective	....	....	200	1.7	200	1.7
19. Unassigned time	5885	49.0	1565	13.1	1435	12.0

It is interesting to note the increase in time devoted to music, nature study, and manual training if taken to include drawing, and the decrease in time devoted to English; more important still, note the decrease in the so-called unassigned time.

A reading of our course of study and a comparison of it with those of inland cities would not even suggest that New York City with its immense foreign population has a unique educational problem differing radically from that of cities in which the bulk of the population is of native stock. New York is the largest Jewish city in the world, the second largest Italian city, the third largest Russian city. It is stated that in the elementary schools of the city there are children of at least fifty-four nationalities. The differences in language, ideals, and customs of these groups tends to make the problem of "benevolent assimilation" essentially the work of the public school. Such work cannot be successfully done under a curriculum which has been aptly characterized as static and inflexible.[3] As I stated in my earlier article in THE PSYCHOLOGICAL CLINIC,[4]

[3] McMurry, Frank, Reports upon the Quality of Classroom Instruction, Course of Study, and Supervision by Principals, issued by Committee on School Inquiry, 51 Chamber Street, New York.

[4] *See* Age and Progress in a New York City School, THE PSYCHOLOGICAL CLINIC, Vol. vi, No. 8, January 15, 1913, p. 209.

sociological facts like these are the basis of a plea for a minimum course of study, giving a large percentage of unassigned time to be distributed at the discretion of local supervisors in accordance with the needs of a particular locality.

Moreover a uniform course of study extending over a period of eight years is based on the assumption that the school population is homogeneous not only as regards nationality but also as regards ability. Such a conception is not in accord with recent investigations. A study of children in the Vineland schools conducted under the supervision of the New Jersey Training School and published by Superintendent Johnstone affords interesting testimony. Testing 1547 "average" pupils by the Binet scale, they found that 349 children were from one to four years better than normal, 582 were normal, and 616 were from one to six years retarded. A curriculum based on the assumption that as regards mentality children are "about the same" or "all about alike" inevitably fails to meet the requirements of actual conditions. The curriculum must provide not only for differences in average ability, but also for differences among individuals of the same average ability.[5] An increasingly large number of principals in our system are coming over to the point of view expressed by Professor Snedden in the statement, "A uniform course of study for an entire cosmopolitan city, prescriptive as to most of its features, is a pedagogical absurdity and offense."

Another problem worthy of consideration in connection with curriculum making is the length of the course for elementary school pupils. A solution of this cannot be found unless we can determine the period of growth during which a child should be subjected to the conditions prevailing in the average elementary schools. Shall we take the advent of puberty to mark the close of this period? As more data become available, the opinion that we should do so is becoming more wide-spread. This would fix the limits of elementary schooling at six and fourteen years. As Dr. C. Ward Crampton has shown,[6] pubescence as a rule is accompanied by certain characteristics, physical, mental, and emotional, which render it advisable to subject pupils of this type to a different regimen from that adapted to prebubescent pupils. This idea conforms to the general spirit of our compulsory educational law, but of course assumes a physiological rather than a chronological age limit. Despite the great elimination in the seventh and eighth years of our present course,

[5] *See also* Jones, Elmer E., Individual Differences in School Children, THE PSYCHOLOGICAL CLINIC, vol. vi, no. 9, February 15, 1913, p. 241.

[6] Crampton, C. Ward, The Influence of Physiological Age upon Scholarship, THE PSYCHOLOGICAL CLINIC, Vol. i, No. 4, June 15, 1907, p. 115.

as evidenced by the fact that only 42 per cent of the pupils enrolled in the grades complete the course of study, there are 12,000 more adolescent pupils in the elementary grades of the schools of this city than there are in all the city's high schools. In other words, as Dr. Frank Bachman pointed out in his recent report on "Promotion, Non-promotion and Part Time," from the standpoint of age the New York City elementary schools are an elementary school, a high school, and a college, all with one uniform maximum curriculum. Should not these adolescents standing on the threshold of industrial life be grouped in prevocational schools in which they will receive, in addition to instruction in formal subjects, such instruction relating to the constructive activities as will develop taste and abilities of distinct economic value?

Another point worth considering is that even though we fix an arbitrary chronological eight year limit, the amount of work to be covered within that time is practically determined by the average attendance of pupils completing the eight year course. Dr. Bachman finds that in New York City 7.2 years represents the average attendance of such pupils. That is to say, a course of study intended to cover an eight year period should not be heavily overloaded but should be easily completed in less than eight years.

Summarizing the foregoing discussion we may say that unless the problem of the curriculum is interpreted in terms of definite, authenticated social and psychological facts, we may deceive ourselves into assuming that certain accepted principles will insure a curriculum and a practice that conform to the needs of the situation. Tradition, opinion, or textbook definitions of the educational process consisting of Latin nouns and long descriptive adjectives occasionally inspire and clarify progress, but more frequently hinder and befog. It has been well said, "We should do our utmost to escape the bond of opinion and to meet the actual conditions of life with accurate adjustments." General statements of the meaning of education and hypothetical statements as to the makeup of an ideal course of study, irrespective of the peculiar local conditions which a study of the situation would probably reveal, have unwittingly led to the imposition upon our school system of a uniform encyclopedic course of study, the fruits of which have been futile effort and exhaustion on the part of pupil and teacher, and perennial caustic criticism from the facile pen of the pragmatic layman.

In view of the fact that during the next year there will probably be considerable revision of the New York course of study, it may not be inadvisable, by way of conclusion, to make some suggestions with reference to the possible participants in such revision. The

cooperation of intelligent men and women in the community, whether or not they be members of the Board of Education, should certainly be enlisted. If the word *intelligent* be understood as meaning that the individual citizen and the civic or industrial organization represent such breadth of culture and such keenness of social insight based upon extended experience as will enable them to appreciate the conditions that the average pupil must face, their cooperation is to be heartily commended. Indeed Superintendents Gustav Straubenmuller and Albert Shiels have been markedly successful in securing the active cooperation of industrial organizations with the work of the vocational school and elementary evening schools. Frequently however laymen are not competent to appreciate the complexity of the problem involved, and become extreme advocates of either the so-called "fads and frills" or of the "three R's". Less frequently, because of special knowledge or special interests they become advocates of particular subjects as music or nature study.

If teaching is a profession on a par with law or medicine, no board of superintendents should consider that its function is to register automatically what purports to be judgment of the community until that judgment has been subjected to careful scrutiny to insure its conformity with the needs of the situation. Too frequently the opinion voiced with the loudest noise and greatest emphasis is that of a limited rather than of a representative group. It is the fundamental duty of school experts to keep in close touch with social progress and to invite constructive criticism. Any supervisory board which becomes bureaucratic either because of the dominating personality of a courageous leader or because of a red tape procedure in the conduct of official business, tends to prevent frequent adjustments of school conditions to social needs, and in so far as it does this it is an unqualified evil.

The special supervisor, the expert on subject matter, is also responsible for many of our ills. Once let it be granted that the subject is to be taught and the expert considers it his bounden duty to enlarge his problem until the complete body of thought and practice, whether in music, physical training, arithmetic, or technical grammar, is incorporated into the syllabus. Very frequently a board of superintendents or a board of education, because of a felt want of knowledge of a technical subject, uncritically accepts the overloaded syllabus which the specialist offers for adoption. Even though the state law and the course of study indicate minimum requirements as regards topics, the syllabi are practically mandatory maxima.

Cordial cooperation on the part of laymen and professional experts, among the latter being included not only superintendents

but also principals and teachers working in the light of professional knowledge gained through personal experience and official questionnaires, should enable any school system to produce an effective course of study. All syllabi should be regarded as tentative until checked by teachers in the light of classroom practice. In other words the work of the experts should be to outline on the basis of intimate knowledge, varied minimum courses of study to be tried out in the different sections of the city to which they are best adapted. Such a scheme is perfectly consistent with the maintenance of proper academic standards. Piecemeal revision, at frequent intervals, as experience shows to be desirable, will tend to do away with the static, inflexible courses of study which now prevail. The present uniform maximum courses of study were prepared and continue to exist on paper in utter disregard of changes in the social group and of variations in ability, length of school career, etc., within the group of pupils. Moreover a failure to encourage a spirit of initiative and cooperation among those whose task it is to execute the paper demands of a course of study, and a failure to provide for official channels through which constructive criticisms can be made, have frequently developed conditions that run absolutely counter to all the qualities of flexibility and changeability that an ideal course of study should possess.

PROGRESS OF THE REPEATERS OF THE CLASS OF 1912 OF THE PUBLIC SCHOOLS OF WASHINGTON, D. C.

By Katherine H. Bevard,

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This study was undertaken with the purpose of ascertaining to what extent the eighth grade pupils of 1912 in the Washington Public Schools had repeated grades in their progress through the schools, in which grades the repeating occurred, and what the causes of the repeating were.

By means of printed blanks, Dr. William M. Davidson, the superintendent of public schools, collected the data for the study just before the mid-year promotions of February 1, 1912, at which time there were enrolled in the eighth grade 3243 children of whom 2433 were white and 810 colored (tables 8 and 9).

The printed blanks consisted of a "Pupil's Sheet" for every pupil who had ever skipped or repeated a grade, and a "Teacher's Sheet" on which the teacher condensed the information contained on the pupils' sheets. Both sets of papers were then collected by the supervising principals and sent to the superintendent's office.

The "Pupil's Sheet" called for the following date:

1. Name.
2. Sex.
3. Date of birth.
4. Age to nearest half year.
5. Private schools attended.
6. Other public schools attended.
7. Grade first entered when starting to school.

A list of the sixteen grades (1A to 8B) was then given, opposite which were recorded the grades skipped, grades repeated, and the cause of repeating.

The results of the investigation have been tabulated in sections representing the nine white and the four colored divisions of the public schools. Seven tables were prepared for each of the thirteen divisions, the totals of which were used in making the nineteen tables in the following summary.

COMPARISON BY GRADES OF REPEATING AND ITS CAUSES.

TABLE 1. WHITE SCHOOLS.

	Grades Skipped			Grades Repeated			CAUSES OF REPEATING														
							Illness or Physical Defect			Change of Schools			Poor Attendance			Failure in Studies			Other Causes		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
									23.8%			8.1%			5.3%			60%			2.6%
Totals....	205	262	467	1439	1386	2825	325	349	674	115	116	231	80	70	150	882	813	1695	37	38	75
8B.....	..	..	..	88	138	226	6	18	24	6	7	13	2	6	8	74	107	181	..	..	..
8A.....	13	14	27	143	150	293	14	24	38	5	10	15	7	5	12	111	111	222	6	..	6
7B.....	15	22	37	125	142	267	17	25	42	12	16	28	8	7	15	87	91	178	1	3	4
7A.....	7	18	25	109	122	231	15	27	42	9	14	23	8	8	16	77	71	148	..	2	2
6B.....	15	15	30	102	124	226	22	29	51	4	14	18	4	6	10	72	71	143	..	4	4
6A.....	13	9	22	83	75	158	20	24	44	12	8	20	3	2	5	43	41	84	5	..	5
5B.....	15	13	28	90	82	172	12	23	35	5	8	13	4	5	9	67	44	111	2	2	4
5A.....	23	11	34	73	67	140	12	15	27	11	11	22	2	3	5	48	35	83	..	3	3
4B.....	16	23	39	75	74	149	14	17	31	6	6	12	5	5	10	50	44	94	..	2	2
4A.....	20	28	48	60	73	133	14	22	36	3	5	8	4	5	9	38	40	78	1	1	2
3B.....	16	32	48	87	74	161	21	22	43	12	6	18	1	2	3	51	41	92	2	3	5
3A.....	11	24	35	85	72	157	26	19	45	10	4	14	3	3	6	44	42	86	2	4	6
2B.....	19	17	36	80	47	127	30	23	53	7	1	8	5	3	8	36	20	56	2	..	2
2A.....	13	13	26	75	42	117	31	22	53	6	..	6	6	2	8	28	18	46	4	..	4
1B.....	3	9	12	81	53	134	35	20	55	3	3	6	9	4	13	28	19	47	6	7	13
1A.....	6	11	17	83	51	134	36	19	55	4	3	7	9	4	13	28	18	46	6	7	13

COMPARISON BY GRADES OF REPEATING AND ITS CAUSE.

TABLE 2. COLORED SCHOOLS.

	Grades Skipped			Grades Repeated			CAUSES OF REPEATING														
							Illness or Physical Defect			Change of Schools			Poor Attendance			Failure in Studies			Other Causes		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
									32.2%			3%			11.1%			48.1%			5.3%
Totals....	50	69	119	246	371	617	70	129	199	2	17	19	24	45	69	135	162	297	15	18	33
8B.....	..	..	..	11	19	30	..	3	3	..	1	1	2	2	4	8	13	21	1	..	1
8A.....	1	..	1	12	22	34	..	5	5	..	1	1	1	2	3	11	14	25	..	..	..
7B.....	7	13	20	19	42	61	3	11	14	1	2	3	3	3	6	12	23	35	..	3	3
7A.....	5	3	8	15	20	35	3	5	8	1	1	2	1	2	3	10	12	22	..	..	..
6B.....	4	4	8	10	26	36	2	6	8	..	3	3	1	2	3	6	13	19	1	2	3
6A.....	5	4	9	12	19	31	1	5	6	..	..	..	2	5	7	8	8	16	1	1	2
5B.....	3	..	3	19	28	47	6	9	15	..	3	3	4	4	8	9	11	20	..	1	1
5A.....	8	3	11	13	15	28	3	4	7	..	..	..	2	4	6	8	7	15	..	..	..
4B.....	4	7	11	14	18	32	3	8	11	..	1	1	2	5	7	8	2	10	1	2	3
4A.....	2	7	9	11	18	29	4	6	10	..	1	1	2	6	8	4	4	8	1	1	2
3B.....	5	11	16	17	23	40	8	5	13	..	1	1	..	3	3	8	14	22	1	..	1
3A.....	5	8	13	17	23	40	9	6	15	..	1	1	..	3	3	7	13	20	1	..	1
2B.....	1	5	6	17	20	37	7	8	15	..	..	..	2	1	3	8	8	16	..	3	3
2A.....	..	4	4	17	20	37	7	8	15	..	..	..	2	1	3	8	8	16	..	3	3
1B.....	..	..	..	21	29	50	7	20	27	..	1	1	..	1	1	10	6	16	4	1	5
1A.....	..	..	..	21	29	50	7	20	27	..	1	1	..	1	1	10	6	16	4	1	5

The Amount of Repeating.

Tables 1 and 2 show that 2825 grades had been repeated in the white schools and 617 in the colored, a total of 3442 half-year grades. Including the grades to be repeated by the 452 white pupils and 65 colored who were not promoted February 1, 1912 (tables 3 and 4), the total number of repeated grades is increased to 3959 (tables 5 and 6). This gives an average of 1.2 grades per pupil enrolled, and 2 grades per repeater.

In the white schools 112 repeaters skipped one or more grades (table 3), and in the colored schools 20 repeaters skipped grades (table 4).

Including pupils who were not promoted February 1, 1912, there were 1521 repeaters in the white schools and 387 in the colored, a total of 1908 (tables 8 and 9), or 58.8 per cent of all the eighth grade pupils. Of the 2433 white pupils and 810 colored pupils enrolled, 62.5 per cent of the former and 47.7 per cent of the latter are repeaters (tables 8 and 9).

It should be remembered that these children are not typical of the school population as a whole, for the reason that they are survivors. The less successful ones drop out before reaching the eighth grade. It is also to be noted that 67.3 per cent of the white pupils enrolled and 76 per cent of the colored are 8A pupils whose 8B records of repeating of course could not be included in this study.

Fifty-four and one-tenth per cent of the white repeaters and 46.5 per cent of the colored repeated more than one grade (tables 5 and 6). Of the white pupils 39.5 per cent repeated only one grade, but 25.9 per cent of these pupils were not to be promoted February 1, 1912; 31.2 per cent repeated two grades, but 20.7 per cent were not to be promoted; 13.8 per cent repeated three grades, but 31.9 per cent were not to be promoted (table 5).

In the colored schools, 47.5 per cent repeated only one grade, but 15.2 per cent were not to be promoted February 1, 1912; 35.6 per cent repeated two grades, but 5.7 per cent were not to be promoted (table 6).

The greatest number of grades repeated by a white pupil is eleven; by a colored pupil, seven (tables 5 and 6).

COMPARISON OF SKIPPING AND REPEATING.

TABLE 3. WHITE SCHOOLS.

Division	Enrolment			No. of Skippers			Per cent of Skippers	Skipped more than one grade			No. of Repeaters			Including Feb.,1912	Per cent of Repeating	Including Feb.,1912	Repeated more than one grade			Not promoted Feb.,1912
	Boys	Girls	Total	Boys	Girls	Total		Boys	Girls	Total	Boys	Girls	Total				Boys	Girls	Total	
1st..	108	147	255	14	24	38	14.9%	8	13	21	75	87	162	171	63.5%	67. %	49	40	89	73
2d ..	167	199	366	38	45	83	22.6%	13	21	34	75	85	160	173	43.7%	47.2%	35	39	74	47
3d ..	158	170	328	16	25	41	12.5%	9	9	18	87	95	182	192	55.4%	58.5%	58	55	113	38
4th .	142	131	273	18	16	34	12.4%	8	7	15	91	64	155	166	56.7%	60.8%	55	35	90	61
5th .	167	159	326	25	21	46	14.1%	5	9	14	105	109	214	232	65.6%	71.1%	61	66	127	78
6th .	98	149	247	10	14	24	9.7%	3	10	13	59	86	145	159	58.7%	64.3%	37	43	80	52
7th .	120	162	282	7	10	17	.6%	5	6	11	70	107	177	185	62.7%	65.6%	45	63	108	43
8th .	82	75	157	3	2	5	3.1%	1	1	2	60	44	104	112	66.2%	71.3%	39	22	61	29
9th .	90	109	199	7	5	12	.6%	5	..	5	54	73	127	131	63.8%	65.8%	39	43	82	31
	1132	1301	2433	138	162	300	12.3%	57	76	133	676	750	*1426	1521	58.6%	62.5%	418	406	54.1% 824	452

* Note: 112 repeaters are also skippers.

TABLE 4. COLORED SCHOOLS.

Division	Enrolment			No. of Skippers			Per cent of Skippers	Skipped more than one grade			No. of Repeaters			Including Feb.,1912	Per cent of Repeating	Including Feb.,1912	Repeated more than one grade			Not promoted Feb.,1912
	Boys	Girls	Total	Boys	Girls	Total		Boys	Girls	Total	Boys	Girls	Total				Boys	Girls	Total	
	76	137	213	4	11	15	7. %	3	4	7	31	48	79	83	37 %	38.9%	12	27	39	11
10th	94	155	249	15	16	31	12.4%	8	9	17	48	59	107	117	42.9%	46.9%	33	29	62	22
11th	62	102	164	7	17	24	14.6%	4	8	12	34	57	91	99	55.4%	60.3%	19	34	53	23
12th	68	116	184	3	3	6	3.2%	2	1	3	36	51	87	88	47.2%	47.8%	10	16	26	9
	300	510	810	29	47	76	9.3%	17	22	39	149	215	*364	387	44.9%	47.7%	74	106	46.5% 180	65

* Note: 20 repeaters are also skippers.

REPEATING OF INDIVIDUALS.

TABLE 5. WHITE SCHOOLS.

No. of Pupils	Per cent of Pupils	No. of grades repeated	Total	Not promoted Feb., 1912		Total no. of grades repeated
1	.06	11	11	.....	.....	11
2	.13	9	18	.....	.....	18
1	.06	8	8	.....	.....	8
6	.39	7	42	2	33.3%	44
15	.98	6	90	7	46.6%	97
20	1.31	5	100	6	30. %	106
93	6.11	4	372	20	21.5%	392
210	13.8	3	630	67	31.9%	697
476	31.29	2	952	99	20.7%	1051
602	39.57	1	602	156	25.9%	758
95*	6.24	.....	.....	95*		95
Total.....1521	.....	.....	2825	452		3277

* Retarded for first time Feb. 1, 1912.

TABLE 6. COLORED SCHOOLS.

No. of Pupils	Per cent of Pupils	No. of grades repeated	Total	Not promoted Feb., 1912		Total no. of grades repeated
1	.25	7	7	.....	.....	7
4	1.02	6	24	1	25. %	25
2	.51	5	10	.....	.....	10
11	2.84	4	44	1	.9%	45
24	6.2	3	72	4	16.6%	76
138	35.65	2	276	8	5.7%	284
184	47.54	1	184	28	15.2%	212
23*	5.94	.....	.....	23*		23
Total.....387	.....	.....	617	65		682
White and Colored...1908	.....	.....	3442	517		3959

* Not promoted for first time Feb. 1, 1912.

AGES OF REPEATERS.

TABLE 7.

Ages	WHITE PUPILS						COLORED PUPILS					
	Over 15 years			Under 15 years			Over 15 years			Under 15 years		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
20.....	1	..	1	..	..	..	..	..	..	..	..	..
19.....	1	..	1	..	..	..	1	..	1	..	..	..
18[2].....	3	..	3	..	..	..	..	..	..	..	..	..
18.....	3	8	11	..	..	..	2	7	9	..	..	..
17[2].....	16	17	33	..	..	..	1	9	10	..	..	..
17.....	32	26	58	..	..	..	10	22	32	..	..	..
16[2].....	63	61	124	..	..	..	21	29	50	..	..	..
16.....	107	138	245	..	..	..	25	24	49	..	..	..
15[2].....	131	113	244	..	..	..	18	29	47	..	..	..
15.....	128	163	291	..	..	..	21	35	56	..	..	..
14[2].....	..	..	..	113	131	244	..	..	..	22	33	55
14.....	..	..	..	81	101	182	..	..	..	17	16	33
13[2].....	..	..	..	28	34	62	..	..	..	9	18	27
13.....	..	..	..	10	11	21	..	..	..	6	8	14
12[2].....	..	..	..	1	..	1	..	..	..	3	1	4
	485	526	1011	233	277	510	99	155	254	57	76	133
	67.5%	65.5%	66.4%	32.4%	34.4%	33.5%	63.4%	67%	65.5%	36.5%	32.9%	34.3%

* White Colored
1314 344 repeaters.
112 20 who have both skipped and repeated.
95 23 who were not promoted for the first time Feb. 1, 1912.
1521 387 Totals.

COMPARISON OF THE SEXES.

TABLE 8. WHITE SCHOOLS.

	Enrolment	No. Repeating	Including Feb., 1912	Per cent Repeating	Per cent of total Repeaters	Per cent of Repeaters over 15 years	Repeaters "Passing" Scholarship Ratings
Girls...	1301	750	803	61.7%	52.7%	65.5%	548 or 38.4%
Boys...	1132	676	718	63.4%	47.3%	67.5%	432 or 30.2%
Total...	2433	1426	1521	62.5%	100. %	66.4%	980 or 68.6%

TABLE 9. COLORED SCHOOLS.

	Enrolment	No. Repeating	Including Feb., 1912	Per cent Repeating	Per cent of total Repeaters	Per cent of Repeaters over 15 years	Repeaters "Passing" Scholarship Ratings
Girls...	510	215	231	45.2%	59.6%	67. %	113 or 31. %
Boys...	300	149	156	52. %	40.4%	63.4%	91 or 25. %
Total...	810	364	387	47.7%	100. %	65.5%	204 or 56. %
White and Colored	3243	1790	1908	58.8%		6.2%	1184 or 62.6%

As would be expected, many of the repeaters are over age; 66.4 per cent of the white pupils and 65.5 per cent of the colored are over 15 years of age (table 7). The oldest white pupil is 20 years old; the oldest colored pupil, 19 years. In both white and colored schools, the oldest repeaters are boys. In the white schools, 6.75 per cent of the boy repeaters and 65.5 per cent of the girls are over 15 years of age, but there are 41 more girls than boys over age. In the colored schools, 63.4 per cent of the boy repeaters and 67 per cent of the girls are over 15 years, and 56 more girls than boys are over age.

Not including the number not to be promoted February 1, 1912, the present scholarship ratings of the eighth grade white repeaters show 68.6 per cent to be "passing" ratings; that is, 5.8 per cent excellent, 24.6 per cent good, and 38.2 per cent fair (tables 10 and 11).

In the colored schools, 55.9 per cent have "passing" ratings; that is, 1.9 per cent are excellent, 21.1 per cent good, 32.9 per cent fair.

REPEATERS' SCHOLARSHIP RATINGS FEB. 1, 1912.*

TABLE 10. WHITE SCHOOLS.

Division	Grade	No. of Repeaters			el'ent			Good			Fair			Unsatisfactory			Poor			Rating not given		
		Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
1st.....	8B	32	54	86	..	1	1	5	15	20	14	25	39	11	10	21	2	3	5	..	..	..
2d.....	8B	20	36	56	2	..	2	2	13	15	6	3	9	2	4	6	..	1	1	8	15	23
3d.....	8B	28	35	63	1	6	7	10	11	21	16	16	32	1	2	3	..	..	..	..	..	..
4th.....	8B	45	33	78	6	2	8	7	6	13	19	15	34	9	7	16	4	3	7	..	..	..
5th.....	8B	54	64	118	6	6	12	12	21	33	18	21	39	15	14	29	3	2	5	..	..	..
6th.....	8B	22	35	57	1	1	2	3	9	12	2	4	6	7	14	21	6	4	10	3	3	6
7th.....	8B	23	51	74	1	7	8	7	14	21	9	24	33	5	6	11	1	..	1	..	..	..
8th.....	8B	23	24	47	3	4	7	11	10	21	2	5	7	6	4	10	1	1	2	..	..	..
9th.....	8B	11	24	35	1	3	4	2	7	9	4	8	12	4	6	10	..	..	..	..	..	..
Total...	8B	258	356	614	21	30	51	59	106	165	90	121	211	60	67	127	17	14	31	11	18	29
1st.....	8A	43	33	76	1	1	2	4	6	10	15	10	25	14	9	23	6	1	7	3	6	9
2d.....	8A	55	49	104	2	2	4	13	9	22	23	26	49	11	8	19	6	4	10	..	..	..
3d.....	8A	59	60	119	3	3	6	6	24	30	22	18	40	25	9	34	..	6	6	3	..	3
4th.....	8A	46	31	77	2	2	4	7	6	13	18	12	30	11	7	18	7	4	11	1	..	1
5th.....	8A	51	45	96	2	5	7	6	9	15	21	16	37	16	9	25	5	4	9	1	2	3
6th.....	8A	37	51	88	2	3	5	4	17	21	17	21	38	9	7	16	5	2	7	..	1	1
7th.....	8A	47	56	103	..	1	1	11	18	29	23	27	50	9	6	15	4	4	8	..	..	..
8th.....	8A	37	20	57	1	..	1	11	9	20	20	10	30	3	1	4	2	..	2	..	..	..
9th.....	8A	43	49	92	..	2	2	10	16	26	18	18	36	11	10	21	..	2	2	4	1	5
Total...	8A	418	394	812	13	19	32	72	114	186	177	158	335	109	66	175	35	27	62	12	10	22
Grand Total...	8B & A	676	750	1426	34	49	83	131	220	351	267	279	546	169	133	302	52	41	93	23	28	51
Per cent.	8B&A	..	..	..	..	..	5.8%	..	..	24.6%	..	..	38.2%	..	..	21.1%	..	..	6.5%	..	..	3.5%

* Non-promotions of Feb. 1, 1912, not included.

REPEATERS' SCHOLARSHIP RATINGS FEB. 1, 1912.*

TABLE 11. COLORED SCHOOLS.

Division	Grade	No. of Repeaters			Excellent			Good			Fair			Unsatisfactory			Poor			Rating not given		
		Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
10th....	8B	7	16	23	..	..	..	2	3	5	4	6	10	..	2	2	1	3	4	..	2	2
11th....	8B	16	37	53	..	..	..	9	8	17	1	14	15	1	2	3	..	..	..	5	13	18
12th....	8B	12	26	38	..	..	..	1	3	4	1	..	1	7	16	23	..	5	5	3	2	5
13th....	8B	18	20	38	..	1	1	2	3	5	11	13	24	..	..	..	3	2	5	2	1	3
Total...	8B	53	99	152	..	1	1	14	17	31	17	33	50	8	20	28	4	10	14	10	18	28
10th....	8A	24	32	56	1	1	2	9	15	24	13	14	27	..	1	1	1	1	2	..	..	..
11th....	8A	32	22	54	..	1	1	6	3	9	18	10	28	6	..	6	..	1	1	2	7	9
12th....	8A	22	31	53	..	..	..	2	3	5	4	4	8	5	2	7	3	5	8	8	17	25
13th....	8A	18	31	49	2	1	3	3	5	8	2	5	7	..	..	..	2	..	2	9	20	29
Total...	8A	96	116	212	3	3	6	20	26	46	37	33	70	11	3	14	6	7	13	19	44	63
Grand Total...	8B & A	149	215	364	3	4	7	34	43	77	54	66	120	19	23	42	10	17	27	29	62	91
Per cent	8B & A	..	..	..	..	..	1.9%	..	..	21.1%	..	..	32.9%	..	..	11.5%	..	..	7.4%	..	..	25%

* Non-promotions of Feb. 1, 1912 not included.

Where the Repeating Occurred.

Table 1 shows the greatest number of grades repeated to be in 8A in the white schools and 7B in the colored. Had this study been made in June instead of February, undoubtedly the greatest number of grades repeated would be in 8B, since 2229 or 68.7 per cent of the 3243 pupils enrolled are 8A's whose record of repeating in 8B is yet to be made. The per cent of 8B white pupils not promoted February 1, 1912, is 28.6 per cent; the per cent of 8A's is only 13.8 per cent. In the colored schools 20 per cent of 8B's and 6 per cent of 8A's were not promoted.

COMPARISON OF THE SKIPPING AND REPEATING.

TABLE 12.

Grade	PER CENT OF GRADES SKIPPED				PER CENT OF GRADES REPEATED			
	White Schools		Colored Schools		White Schools		Colored Schools	
	B Grade	A Grade	B Grade	A Grade	B Grade	A Grade	B Grade	A Grade
8th....	0	5.7	0	.8	8	10.3	4.8	5.5
7th....	7.9	5.3	16.8	6.7	9.4	8.1	9.8	5.6
6th....	6.4	4.7	6.7	7.5	8.	5.5	5.8	5.
5th....	5.9	7.2	2.5	9.2	6.	4.9	7.6	4.5
4th....	8.3	10.2	9.2	7.5	5.2	4.7	5.1	4.7
3d.....	10.2	7.4	13.4	10.9	5.6	5.5	6.4	6.4
2d.....	7.7	6.2	5.	3.3	4.4	4.1	5.9	5.9
1st....	2.5	3.6	0	0	4.7	4.7	8.1	8.1
Total..	48.9	50.3	53.6	45.9	51.3	47.8	53.5	45.7

The least number of grades repeated in the white schools is in 2A (tables 1 and 12). As is true in other school systems, the "sticking point" seems to be in the sixth grade where the children begin to fail in large numbers. It will be noticed also that the total number of B grades repeated in both white and colored schools is greater than the number of A grades repeated. The difference would be even greater if the 8B records of the large majority of these children now classed as 8A pupils could be included.

The total per cent of B grades repeated in the white schools is 51.3 per cent; the total per cent of B grades skipped is 48.9 per cent. In the colored schools the per cent of B grades repeated is 53.5 per cent; B grades skipped, 53.6 per cent (table 12).

COMPARISON BY SCHOOL DIVISIONS OF THE REPEATING AND ITS CAUSES.

TABLE 13. WHITE SCHOOLS.

	Grades Skipped			Grades Repeated			CAUSES OF REPEATING														
							Illness or Physical Defect			Change of Schools			Poor Attendance			Failure in Studies			Other Causes		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Totals....	205	262	467	1439	1386	2825	325	349	674	115	116	231	80	70	150	882	813	1695	37	38	75
1st Div...	25	41	66	170	150	320	15	28	43	11	9	20	17	16	33	127	95	222	..	2	2
2d Div...	54	69	123	129	146	275	30	38	68	16	8	24	2	11	13	76	84	160	5	5	10
3d Div...	30	45	75	191	175	366	44	53	97	19	31	50	11	4	15	114	87	201	3	..	3
4th Div..	25	23	48	186	109	295	53	34	87	12	3	15	17	5	22	93	67	160	11	..	11
5th Div..	20	34	54	224	223	447	57	54	111	10	14	24	9	7	16	144	135	279	4	13	17
6th Div..	17	34	51	124	142	266	25	52	77	12	17	29	7	9	16	73	58	131	7	6	13
7th Div..	18	8	26	166	209	375	42	56	98	5	17	22	4	10	14	111	117	228	4	9	13
8th Div..	4	3	7	120	78	198	32	19	51	22	12	34	8	2	10	58	45	103	..	..	..
9th Div..	12	5	17	129	154	283	27	15	42	8	5	13	5	6	11	86	125	211	3	3	6

TABLE 14. COLORED SCHOOLS.

	Grades Skipped			Grades Repeated			CAUSES OF REPEATING														
							Illness or Physical Defect			Change of Schools			Poor Attendance			Failure in Studies			Other Causes		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Totals....	50	69	119	246	371	617	70	129	199	2	17	19	24	45	69	135	162	297	15	18	33
10th Div.	6	14	20	50	89	139	18	22	40	..	4	4	4	10	14	24	48	72	4	5	9
11th Div.	27	20	47	89	97	186	30	40	70	2	4	6	6	7	13	51	46	97	..	..	..
12th Div.	11	32	43	59	112	171	12	42	54	..	6	6	11	19	30	30	36	66	6	9	15
13th Div.	6	3	9	48	73	121	10	25	35	..	3	3	3	9	12	30	32	62	5	4	9

EXCESS OF GRADES ABOVE NORMAL NUMBER.

TABLE 15. WHITE SCHOOLS.

	Enrolment			Normal No. Grades	Grades Repeated	Grades Skipped	Net Excess
	Boys	Girls	Total				
Totals	1132	1301	2433	38928	2825	467	2358
1st Div.....	108	147	255	4080	320	66	254
2d Div.....	167	199	366	5856	275	123	152
3d Div.....	158	170	328	5248	366	75	291
4th Div.....	142	131	273	4368	295	48	247
5th Div.....	169	159	326	5216	447	54	393
6th Div.....	98	149	247	3952	266	51	215
7th Div.....	120	162	282	4512	375	26	349
8th Div.....	82	75	157	2512	198	7	191
9th Div.....	90	109	199	3184	283	17	266

TABLE 16. COLORED SCHOOLS

	Enrolment			Normal No. Grades	Grades Repeated	Grades Skipped	Net Excess
	Boys	Girls	Total				
Totals.....	300	510	810	12960	617	119	498
10th Div.....	76	137	213	3408	139	20	119
11th Div.....	94	155	249	3984	186	47	139
12th Div.....	62	102	164	2624	171	43	128
13th Div.....	68	116	184	2944	121	9	112

Tables 15 and 16 (also tables 13 and 14) give a classification of grades repeated by school divisions. By showing the normal number of grades the children should have completed to get to the eighth grade, crediting each school with the grades skipped, debiting the grades repeated, the net excess of grades above the normal number is shown to be 2358 in the white schools and 498 in the colored, a total of 2856 grades.

CAUSES OF REPEATING.

TABLE 17. WHITE SCHOOLS.

Grades Repeated	Per cent due to Illness or Physical Defect	Per cent due to Change of Schools	Per cent due to Poor Attendance	Per cent due to Failure in Studies	Per cent due to Other Causes
8B	10.61	5.75	3.53	80.08	0
8A	12.96	5.11	4.09	75.76	2.04
7B	15.73	10.48	5.61	66.66	1.49
7A	18.18	9.95	6.92	64.06	.87
6B	22.56	7.96	4.42	63.27	1.76
6A	27.84	12.65	3.16	53.16	3.16
5B	20.34	7.55	5.22	64.53	2.32
5A	19.28	15.71	3.57	59.28	2.14
4B	20.80	8.00	6.71	63.08	1.34
4A	27.06	6.01	6.76	58.64	1.5
3B	26.70	11.10	1.86	57.14	3.1
3A	28.66	8.91	3.82	54.70	3.82
2B	41.73	6.29	6.29	44.09	1.57
2A	45.29	5.12	6.83	39.31	3.41
1B	41.04	4.47	9.70	35.07	9.70
1A	41.04	5.22	9.70	34.32	9.70

TABLE 18. COLORED SCHOOLS.

Grades Repeated	Per cent due to Illness or Physical Defect	Per cent due to Change of Schools	Per cent due to Poor Attendance	Per cent due to Failure in Studies	Per cent due to Other Causes
8B	10.	3.3	13.3	70.	3.3
8A	14.7	2.9	8.7	73.5	0
7B	22.9	4.9	9.8	57.3	4.9
7A	22.8	5.7	8.5	62.8	0
6B	22.2	8.3	8.3	52.7	8.3
6A	19.3	0	22.5	51.6	6.4
5B	31.9	6.3	17.	42.5	2.1
5A	25.	0	21.4	53.5	0
4B	34.3	3.1	21.8	31.2	9.3
4A	34.4	3.4	27.5	27.5	6.8
3B	32.5	2.5	7.5	55.	2.5
3A	37.5	2.5	7.5	50.	2.5
2B	40.5	0	8.1	43.2	8.1
2A	40.5	0	8.1	43.2	8.1
1B	54.	2.	2.	32.	10.
1A	54.	2.	2.	32.	10.

CHANGE OF SCHOOLS.

TABLE 19. WHITE SCHOOLS.

Division	No. of skippers	No. of repeaters	Both repeaters and skippers	Attended other public schools	Attended private schools	Attended both private an other public schools	No. of other public schools attended	No. of private schools attended	Total No. of other schools attended	No. of pupils giving change of schools as cause of repeating
1st.....	38	162	18	46	26	3	68	29	97	20
2d.....	83	160	29	74	52	10	92	52	144	24
3d.....	41	182	19	80	28	14	114	28	142	50
4th.....	34	155	11	58	25	10	76	26	102	15
5th.....	46	214	12	72	28	7	100	28	128	24
6th.....	24	145	9	46	20	4	51	20	71	29
7th.....	17	177	5	54	25	9	74	25	99	22
8th.....	5	104	2	21	13	3	26	13	39	34
9th.....	12	127	7	28	11	2	34	11	45	13
	300	1426	112	479	228	62	635	232	867	231
				33.5%	15.9%	4.3%				16.1%

Causes of Repeating.

The causes of the repeating have been tabulated under the following headings: Illness or Physical Defect, Change of Schools, Poor Attendance, Failure in Studies, and Other Causes.

In both the white and the colored schools, the causes of the repeating are credited mainly to failure in studies and illness or physical defect. The highest number of grades repeated on account of failure in studies is 80 per cent in 8B of the white schools and 73.5 per cent in 8A of the colored schools; the least is 34.3 per cent in 1A of the white schools and 27.5 per cent in 4A of the colored schools. The greatest number of grades repeated on account of physical defect in the white schools is 45.2 per cent in 2A; the least is 10.6 per cent in 8B. In the colored schools the highest is 54 per cent in the first grades; the least is 10 per cent in 8B (tables 17 and 18).

Table 1 shows that 8.1 per cent of all the grades repeated in the white schools is due to change of schools; 15.7 per cent of the grades repeated in 5A are credited to this cause (table 17); 16.1 per cent of the white repeaters report change of schools as the cause of their repeating (table 19).

In the third school division with an enrolment of 328 eighth grade pupils, 108 children attended 28 private and 114 other public schools, a total of 142 other schools. Fourteen attended both private and other public schools. Fifty give change of schools as cause of repeating (table 19).

The second school division with an enrolment of 366 eighth grade pupils reports 126 children as having attended 52 private and 92 other public schools, a total of 144 other schools. Ten children attended both private and other public schools. Twenty-four give change of schools as cause of repeating.

Of the total number of repeaters (1426), 479 or 33.5 per cent attended other public schools; 228 or 15.9 per cent attended private schools; 62 or 4.3 per cent attended both public and private schools. A few of the repeaters attended the public schools of as many as seven different cities.

These 479 repeaters attended 635 other public schools located in 38 states and 12 other countries. In 34 cases the location of the school was not given, so that there is reason to think that nearly every state in the Union is represented.

NEWS AND COMMENT.

Successful Schools for Truants in Los Angeles.

Mr. E. J. Lickley, Supervisor of Compulsory Education and Evening Schools of Los Angeles, Cal., has issued a highly interesting report, of which the following is an abstract:

The present compulsory education law became effective July 1, 1903. In 1905 the School Department took upon itself the task of solving the truancy problem by establishing a special school to which persistent truants were sent. This school very quickly demonstrated its educational, social and economic value and today the city has nine schools of a similar nature.

The Special Schools are open to truants and other troublesome boys. They are in no degree to be considered places of commitment for school offenders; rather they are to be considered as simply *other* classes for *other* types of children. The Special School is dedicated to the principle that no pupil shall fail and no pupil shall be suspended or expelled from the public school. If he cannot adjust himself to the environment of the regular graded school then he should be given a school where he can, if necessary, make his own environment. If the boy will not go with you, then go with the boy for a while and soon you will have acquired such an influence over him that later on he will go with you. It is a sad commentary on the public school when the only thing it has to say to the troublesome boy is "get out".

The aim in management is to make these schools more like life, the life of the big world outside which the boy is after when he runs away from school. The theory on which this aim is based is that if a school is like life, a boy will like to be there for the same reason that he likes to live; and the theory works. The fact that it has worked so well as to improve the personnel of the boys who are assigned to these schools, indicates that the influence of the schools is working upstream, and checking the drift of boys of the regular classes into meanness, viciousness and school hoboism. Los Angeles no longer has the typical school hobo.

Every ten days or two weeks the boys take a hike or go fishing or swimming, as the case may be. The department gives as much credit for a good day's hike, or a good game of baseball, as for a problem in arithmetic solved.

No coercion nor force is ever employed in transferring pupils from the regular schools to the Special Schools. No truant officer nor even a teacher accompanies them. They are assigned by the superintendent and then transferred in the usual way. They are told the purpose of these schools and the reason they are sent there, and then allowed to go of their own accord. No pupil sent in this way has failed to reach the Special School promptly. The reason is plain. The boy is dealt with in an open, honest, common sense manner. He is not regarded either

as a baby or as a criminal, but just as a growing, restless boy. The boy appreciates this and is quick to respond.

The Special Schools aim to eliminate all that is unnecessary and to hold to fundamentals. To accomplish this result the teachers of these classes are authorized to vary the course of study according to the requirement of instruction. In other words the school is adapted to meet the needs of each individual pupil. In this way the school is made to fit the boy and not the boy the school. In doing this a regular recess period of fifteen minutes is frequently lengthened to give the pupil the additional play and outdoor life which he so often sadly needs. The playground also affords the teacher an opportunity to do the more important work of character development so essential to these boys who have been cast aside by the regular schools.

The sensible blending of work and play forms an important phase of this part of school work, because most of these boys are disconnected and out of harmony with the accepted order of things. Considerable latitude is allowed in these schools, for it is frequently necessary to change receding lines to get a true perspective.

The teachers in these schools are all men, and to this fact the remarkable success of these schools is largely due. These men are chosen with great care. They must possess the ability to understand boy life and fit themselves into it. Just to the extent they win the boy's loyalty are they successful. These teachers are usually athletes because the Special Schools emphasize the value of play in developing the character of the troublesome boy. The teacher of a school of this type must be peculiarly fitted, temperamentally, for dealing with the boy who is out of harmony with the accepted order of things. Teachers who cannot understand the spirit which prompts a boy to tie a can to a dog's tail, stick a pin in a fly, steal fruit and play hookey from school to go fishing or swimming, never succeed in a Special School for the so-called bad boy. In fact, teachers whose comprehension of boy life is limited seldom succeed with any boy.

No teacher is ever assigned more than fifteen pupils. The teacher must possess unusual ability to interest these boys to make up lost time and also seek to find and strengthen their best impulses. These efforts must be solely on a scientific basis as the transformation in the pupil is a social one in which the boy has found a friend and helper who devotes himself constantly and, in a sense, exclusively to his great need.

These teachers do not refer to the boy's bad record nor do they ever resort to nagging tactics. They "prefix" the boy's character by teaching him constructive goodness when he is out of temptation. The boy starts anew when he enters the Special School, with no reputation to live up to and no bad record to live down. The teacher simply accepts him as he is. The boy is in no sense made to feel that he is a culprit, and consequently, he is never robbed of his rightful heritage of self-respect.

Many different types of pupils find their way into the Special Schools. Any boy excluded for any reason from the regular grades, is admitted unless a more suitable place is available. By this method of caring for troublesome boys, expulsions and suspensions have practically disappeared from our public schools. Of course the most of these boys are truant or disciplinary cases. The Special

School is the road to salvation for the boy headed for the Juvenile Court and a subsequent career of idleness and crime. No boy has ever been refused admission to the Special Schools and no boy has ever been suspended, expelled or turned away. We care for all and hold to the theory that any school system is derelict in its duty that "fails" one pupil or shuts its door to him. Truancy is the result of a boy's natural protest against being a misfit. The remedy is a simple one. Put him where he does fit, or make a place to fit him. Our effort is directed, not toward the fittest, but toward the unfittest. Every boy cannot be made to attain a fixed, artificial standard, but the best in every boy can be developed to its utmost.

All but one of these Special Schools are located away from the downtown district. By making the Special Schools small, widely separated, ungraded and located in the outskirts Los Angeles avoids the unfortunate institutionalized conditions that must exist in a large central school for truants or incorrigibles. The cities that have tried to solve this problem by establishing a large central school have made little progress, and in fact in most cases have met with failure.

Each Special School has ample room for play, either on its own grounds, a nearby public playground or surrounding vacant land. The value of sufficient ground for an outlet to the boundless energy of these boys cannot be over-estimated. Sensible blending of work and play will work wonders in the development of the boy's character.

Not only is an elaborate equipment not necessary in a Special School, but it is practically useless during this period of growth of the troublesome boy. Not an elaborate plant, not an elaborate equipment, but an elaborate teacher is essential to the boy who is out of step. The humanizing touch of a strong personality is of vastly greater worth to the boy at this time than any mechanical standardized course of study. It is from this very thing that he has broken away and the pathway back, which he must go, must be shown to him by a guide who is wise in the lore of the boy world and who can catch glimpses of the visions that lure the boy away.

The ideal Special School building consists of two rooms. One room has the ordinary equipment for fifteen pupils while the other room should be fitted for various forms of manual and elementary trade work, such as carpentry, cabinet making, lathing, bicycle repairing, printing, brass and copper work and other kinds of mechanical work in simple form. The ideal arrangement is one teacher who can also do the manual work.

To these schools none but the persistent truants have been sent and yet for seven years the attendance has been almost perfect, the average attendance for the entire time being more than 99 per cent.

The reports for the past seven years show very clearly the improvement in the method of dealing with truancy. Before the Special Schools were opened all persistent truants were arrested and taken before the Juvenile Court. This was a very expensive and unsatisfactory way of dealing with the problem. These truants are now taken care of by the school department at no expense beyond the cost of their education in a public school. The following figures are taken from the reports sent to the Superintendent's office for the past seven years.

		Enrolment.
No. cases taken before Juvenile Court 1905–'06	56	37,877
No. " " " " " 1906–'07	30	42,998
No. " " " " " 1907–'08	1	46,092
No. " " " " " 1908–'09	2	48,430
No. " " " " " 1909–'10	3	52,054
No. " " " " " 1910–'11	2	57,038
No. " " " " " 1911–'12	0	67,875
No. " " " " " 1912–'13	2	(est.) 80,000

As a direct result of the work of the Special Schools truancy cases from the city have disappeared from the Juvenile Court calendar. This represents the saving of many boys who otherwise would have gone from one delinquency to another until they had become hardened offenders and the inmates of a reformatory.

We can only realize the extent and importance of this work when we know that 90 per cent of our criminals begin their career as truants. Arthur J. Pillsbury, formerly Secretary of the State Board of Examiners, says: "In nine cases out of every ten the first step on the criminal highway is taken by the *truant*." Mr. Pillsbury also says: "In very self-defense children must be kept in school. There will be no diminution of criminality until this is accomplished."

These startling statements, which are corroborated by the best authorities, demonstrate clearly that truancy is not only an educational problem, but a great social and economic problem as well. It logically follows then that money spent in correcting the truancy habit is a good investment. The Special Schools for truants have saved the State of California thousands of dollars during the seven years of their existence. Their work has been still more valuable and far reaching in that they have saved hundreds of boys from careers of criminality and started them well on the road to upright living and good citizenship.

Boys are kept in these schools for periods of varying length, ranging from a few days to several months. More than 95 per cent make good after their stay in the Special Schools. This result is rather remarkable when the fact is considered that no boy who has been excluded from the regular schools for any cause, has been refused admission to the Special Schools. The troublesome, disagreeable, disorderly boy is a most valuable asset and the school must not refuse him a place just because his independent nature refuses to conform to arbitrary standards that even experts cannot accept.

The Special Schools have demonstrated the fact that truants will attend school when school conditions are natural and the boy is not compelled to adjust himself to an environment artificial in its nature and detrimental to the individual growth and development of the independent boy. As a direct result of these schools expulsions have disappeared from the Los Angeles schools, suspensions are reduced to a minimum, and the so-called bad boy has practically ceased to be a problem there.

Notable Features on Program of Hygiene Congress.

The Fourth International Congress on School Hygiene, and the first to be held in America, at Buffalo, August 25–30th, will be by far the most elaborate effort yet made in this country toward getting the problems of school hygiene before the world.

The program committee announces a program of two hundred and fifty papers and fifteen symposiums, taking up hygiene from the following points of views:

I. The hygiene of school buildings, grounds, material, and up-keep.

II. The hygiene of school administration and schedules.

III. Medical, hygienic, and sanitary supervision in schools.

The contributors to the program make up a notable list of speakers, college presidents and professors; state, city and county commissioners of education; teachers and superintendents of public schools, medical college professors; state, county and city health officers; physicians in private practice, engineers and architects.

Special discussions are being arranged on the following subjects:

School Feeding: arranged by the Committee on School Feeding of the American Home Economic Society.

Oral Hygiene: arranged by National Mouth Hygiene Association.

Sex Hygiene: arranged by the American Federation of Sex Hygiene.

Conservation of Vision in School Children: arranged by the Society for the Prevention of Blindness.

Health Supervision of University Students: arranged by Dr. Mazyck P. Ravenel, University of Wisconsin.

School Illumination: arranged by the Society of Illuminating Engineers.

Relation between Physical Education and School Hygiene: arranged by the American Physical Education Association.

Tuberculosis among School Children: arranged by the Society for the Prevention of Tuberculosis.

Physical Education and College Hygiene: arranged by the Society of Directors of Physical Education in Colleges.

The Binet-Simon Test: arranged by Professor Terman, Stanford University.

The Mentally Defective Child: arranged by Dr. Henry H. Goddard, Vineland, N. J.

The Congress is open to all persons interested in school hygiene upon the payment of a fee of five dollars. Application for membership should be sent to Dr. Thomas A. Storey, College of the City of New York, New York City.

President Wilson has accepted the honorary office of patron of the Congress. The president of the Congress is Mr. Charles W. Eliot of Harvard University. The vice-presidents are Dr. William H. Welch, of Johns Hopkins University, and Dr. Henry P. Walcott, president of the recent International Congress on School Hygiene and Demography, and chairman of the Massachusetts State Board of Health.

The Psychological Clinic

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RE-AVERMENTS RESPECTING PSYCHO-CLINICAL NORMS AND SCALES OF DEVELOPMENT.

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Recent discussions seem to call for a re-emphasis of certain conclusions at which I had previously arrived.

1. An expert experimental, educational, or genetic psychologist is not, in any legitimate use of the word, a skilled clinical psychologist.[1] The former have no more right to regard themselves as expert clinical psychologists than the professional anatomist or physiologist has to consider himself a medico-clinical examiner. The skilled psycho-clinicist will require just as prolonged and thorough a technical preparation as the skilled medico-clinicist.[2] Just as the preparation of the physician necessitates more than a thorough grounding in anatomy, physiology, and embryology, so the preparation of the clinical psychologist requires more than an expert knowledge of general, experimental, educational, genetic, or abnormal psychology, or of child study.[3] He should have in addition a thorough training in psycho-clinical procedure, which should include not only work in a laboratory clinic but an interneship—a "hospital year," so to speak,—spent in first-hand study of backward, feebleminded, epileptic, psychopathic, and disciplinary cases. These cases must be juvenile subjects if the examiner intends to work with children. He must have also a thorough training in educational therapeutics. By this I include primarily not the so-called psycho-therapeutics of the skilled psychiatrist—suggestion, psycho-analysis, re-education —but particularly the differential, corrective pedagogics of the educational expert on mentally deviating children. There is no general scheme of corrective pedagogics. The method will have

[1] *Science*, 1913; *Journal of Educational Psychology*, 1912, p. 224.
[2] *Journal of Educational Psychology*, 1912, p. 224 f.; *Science*, 1913.
[3] *Journal of Educational Psychology*, 1911, p. 207 f.

to be differentiated to meet the needs indicated by a diagnosis of each case. It will be as different for the feebleminded and for the stutterer as it is for the deaf and for the blind. Finally, the clinical psychologist must have some knowledge, didactic and clinical, of physical, orthopedic, and pediatric defects, of neurotic and psychotic symptomatology, and of personal, family, and heredity case-taking.

It is evident that there is no modern specialist who is equipped with all these elements of knowledge except the properly trained clinical psychologist. The general practitioner, pediatrician, orthopedist, neurologist, psychiatrist, educational, experimental, genetic, or abnormal psychologist are all lacking in some of the essentials which the expert psycho-clinicist must possess. The ordinary special class teacher (or school nurse) is, of course, not to be considered for a moment as a trained psycho-clinicist.[4] To be sure, well trained class-room teachers can learn to administer a few tests, and may thereby be able to group children with approximate accuracy into retarded, normal, and accelerated classes, just as an intelligent layman may be able to classify, with some accuracy, people into sickly and healthy groups. But surely the skilled physician attempts to do more than roughly classify his cases. In the measure in which he is competent, he makes a differential diagnosis of each case and adapts the treatment to the diagnosis. The problem of the competent psycho-clinicist is precisely the same: He must attempt not only to measure the amount of mental deviation but to give a differential diagnosis of each case. The teacher or nurse may indeed be of considerable service as an assistant to the psycho-clinicist,—provided of course that she possesses the requisite tact and the necessary technical training. To her (or him) may be intrusted a considerable portion of the formal, mechanical testing, and the collection of the data for the case histories. Her relation to the clinical psychologist is much the same as the relation which the trained nurse sustains to the skilled surgeon. The psycho-clinicist would no more think of entrusting the final diagnosis of a mentally abnormal child to the teacher or nurse, than the physician would permit a nurse to make a differential diagnosis of a physically diseased person. A teacher or nurse who is trained to give the Binet or any other mental tests has no more right to call herself a *clinical psychologist*, than a nurse who is trained to take the temperature, pulse or any other medical readings has a right to call herself a *physician*.

[4] Experimental Studies of Mental Defectives, 1, 110; *Journal of Educational Psychology*, 1912, p. 224. *Medical Record*, 1913. A similar view is evidently entertained by Bruner: Addresses and Proceedings of the National Educational Association, 1912, p. 1110 f.

We shall for a long time be obliged to utilize more or less unskilled, or only partially skilled, workers in the mental testing of deviating children, because we shall probably not be able for a long time in the future to secure a sufficient number of adequately trained specialists to examine the millions of pedagogically deviating children which clog the wheels of our educational machine. I do not know that diagnosis based on this crude type of work—routine testing by amateurs—will enable us to select mentally retarded children with any greater precision than can now be done by the ordinary class-room standards for determining pedagogical retardation. Nor will it give us any markedly superior insight into the peculiarities of the mental defects of the children. I am quite certain that many diagnoses by teachers or nurses based purely upon the Binet tests will be very misleading, often humorously absurd, and at times pernicious. I base this judgment upon extensive use of the tests on various types of children: normal, backward, feebleminded, epileptic, insane, precocious. The diagnoses which I make after an exhaustive study of all the available facts are quite at variance with the Binet rating in a considerable percentage of cases. In one school system where an amateur (teacher) is functioning as *clinical psychologist* over 49 per cent of the retarded children tested were classified as feebleminded! I am free to confess, however, that I have found the Binet scheme of more value than have the psychologists in the Chicago schools (judging by personal reports made to me by Dr. Bruner).

In spite of all this, judicious and guarded testing by trained teachers will have some value, because it will confirm (or refute) the class-room teacher's judgment by a system of independent, objective measures. Independent confirmation by outside examiners, even though they be of limited training, will be welcome to teachers, school officials, and parents; although it must be said that many parents will be reluctant to accept diagnoses not made by experts of acknowledged authority. In London parents have a right to demand independent examinations of mentally defective children every six months.

It should be remembered that mental testing is only one phase of mental diagnosis; the determination of mental status does not automatically include the determination of the causative factors. "The function of the Binet-Simon, or any other graded scale of intelligence, is to give us a *preliminary*, and not a *final* survey or rating of the individual." The testing is "merely a point of departure for further diagnosis."[5] Grade teachers or nurses are "unfitted

[5] Experimental Studies of Mental Defectives, 109.

for the two highest functions of the psycho-clinicist. First, they are incapable of giving a satisfactory diagnosis (the chief consideration in any examination) of individual cases; and secondly, they are unable to conduct research—to prosecute productive and constructive research."[6] And I want to repeat with all possible emphasis that *the real function of the amateur—the examining teacher or nurse or the physician unskilled in psychology—in the schools is not that of the clinical psychologist or the expert diagnostician, but that of the laboratory assistant to the skilled diagnostician who, so far as mental cases are concerned, must be the specially trained clinical psychologist.*

That there are only a few clinical psychologists who have an adequate conception of, and training for, this type of work it is almost needless to say—though unfortunately there are many teachers and psychologists who quite delude themselves (through mental vagueness, erroneous teaching, and fluid standards of what constitutes a skilled clinical examination) into the belief that they are prepared to function as competent consulting psycho-clinicists. It is however no matter for wonder that there are only a few competent clinical psychologists,—persons who are qualified to act as professional or trustworthy consultants rather than men who, themselves lacking in clinical experience, may be able to write learnedly on what the clinical psychologist should do. For clinical psychology is just being born. I believe it is safe to predict that the type of training outlined above will in future be demanded of the mental examiner of deviating children.

2. Norms of mental functioning established by experimental or educational psychologists by group tests on squads of children may have little practical value as clinical tests.[7] There are various reasons why this is so.

First, group tests require written responses. But the clinical psychologist must reduce written responses to a merely nominal amount, partly because children differ in the rate or skill of writing without evincing a corresponding difference in intelligence; partly because many abnormal children suffer from special motor defects of the hand, so that they cannot do themselves justice in graphic tests; and partly because written responses require too much time. A comprehensive psycho-clinical examination is a time-consuming ordeal, hence there is no time to waste on the mechanics of writing. There are, of course, many valuable tests which can only be done in writing, and these should be given in as brief a form as may be feasible.

[6] *Journal of Educational Psychology*, 1912, p. 225.
[7] *Alienist and Neurologist*, May, 1912.

Secondly, many of the best single group tests carried out by the experimental and educational psychologists cannot be given in less than from three to thirty minutes. It is quite practicable for the educational psychologist to give lengthy tests because usually during any one sitting he attempts to measure only a limited number of traits. But the psycho-clinicist, in order to get a comprehensive picture of his case, must test a very considerable number of functions. Hence the time of each test must necessarily be reduced to an "irreducible minimum."

Thirdly, experiments show that children do better when tested in groups than when tested singly.[8] For this reason group norms may not be serviceable as clinical norms. Merely on *a priori* grounds, since the conditions of testing are different, we would always feel a certain amount of skepticism about the accuracy of clinical norms which have been derived from group results. As a matter of fact, nearly all norms now in practical use, whether mental or anthropometric, have been secured by individual and not by group testing.

It is just because our clinical norms must be based on individual and not on group testing that the task of securing them is herculean. It is this fact that I had in mind in previously emphasizing that the establishment of extensive and reliable clinical norms requires a large staff of workers and an ample subsidy.[9] The problem would be comparatively simple if group norms could be used with assurance for clinical work: it takes no more time to test forty pupils at once in a group than to test one pupil alone. It is worth repeating therefore that it is probably not to the group results of the educational and experimental psychologists that we must look for our norms but to the clinical data of examiners of individual cases. At any rate, some one should make a comparative study to determine whether there is any difference between norms established by group tests and norms for the same tests established clinically.

3. So far as concerns the probing of the efficiency of mental functions by testing, the most serviceable clinical examining technique consists in the graded scales of intellectual, motor, and socio-industrial (possibly also emotional) development.[10] The high value which Thorndike[11] ascribes to the correlation formula probably is justified so far as concerns the diagnosis of the *school system* or of a *number of individuals* of the same ages when tested in groups. But the most

[8] See Burnham, *Science*, 1912, p. 761 f.

[9] *Journal of Educational Psychology*, 1911, p. 204; *Alienist and Neurologist*, May; 1912, Experimental Studies of Mental Defectives, 1912, p. 56 ff.

[10] *Pedagogical Seminary*, 1911, p. 74 ff.

[11] *Science*, 1913, p. 133.

valuable contribution made thus far to the technique of clinical diagnosis—and fundamentally diagnosis means precisely clinical diagnosis—does not come from the correlation formula. If there is any professional psycho-clinicist whose constant reliance in the diagnosis of individual cases is the Pearson formula, I do not happen to know him. No one has yet selected tests for developmental scales on the basis of correlation coefficients, although it is probable that in the selection of tests for such scales preference should be given to tests which have been shown by group experiments to possess a high degree of correlation. Certainly the most important type of "educational diagnosis" done to-day, from the point of view of the practical good accomplished for the children, is clinical diagnosis; and the value of the technique of individual diagnosis would be little impaired if the correlation formula were non-existent.

4. The position I have taken in favor of the continued use of the 1908 Binet scale until an extensive mass of clinical *data is available for a thoroughly scientific revision of the scale*[12] *seems to me to be justified by the developments.* The analysis of the numerous revisions which have appeared in less than a year is here out of place. It is well to remind the reader that Binet's and Simon's own 1911 revision, so far as I can gather, is purely theoretical. Evidently it was made to meet some of the criticisms lodged against the 1908 scale: *viz.*, inequality in the number of tests for each age; the presence of scholastic, experiential tests; incorrect placing of tests, etc. It was not based, as it should have been to meet any justifiable scientific demands, on the retesting of large masses of normal children. Moreover, some of the changes introduced into the scale fly directly in the face of experimental warrant. Thus the date test is placed in Age VIII although the authors maintain that giving dates are "facts that boys of nine are just able to retain" (Dr. Clara Harrison Town's translation). "All the children at eleven years" succeed in composing single sentences containing three designated words; children of eleven succeed in giving sixty words in three minutes; "at eleven the majority" succeed in giving abstract definitions; and yet, in utter defiance of these findings, these tests are placed in Age XII. Here we have the absurd procedure of placing tests in an age in which they do not belong, in the interests of a theoretical reconstruction, and of leaving an important age vacant. It would likewise be interesting to know the evidence on which the seven-digit and rhyme tests were placed in Age XV. Moreover, it

[12] THE PSYCHOLOGICAL CLINIC. Vol. V, No. 7, Dec., 1911, p. 218; *Journal of Educational Psychology*, 1912, p. 224 f.; *Alienist and Neurologist*, 1912, [illegible]ntal Studies of Mental Defectives, 1912, pp. 55, 117.

is more important to have supplied reliable tests for Ages XI, XIII, and XIV, than for Age XV and for adulthood.

Of the other revisions which have appeared in rapid succession it may be said that in *no* case are they based upon the performances of *selected normal* children; in *no* case has an extensive number of cases been tested in *every* age that has been revised (the one possible exception is Goddard's survey; this is entirely commendable from the point of view of the number of children tested, but it is vulnerable, I believe, because of the *narrow-range* scheme of testing employed); in *no* case have the revisions been based on the testing of children who have *just passed their birthdays* (some six-year olds have been 6 years and 1 month, others 6 years and 11 months); in *no* case has the *wide-range* method of testing been used, which I have found essential for purposes of testing out the accuracy of the placing of the tests;[13] in *some* cases revisions have been made in ages in which *only fifteen or twenty children* have been tested, while in other instances age-norms have been revised or supplied although *not a single child has been tested in those ages.* This manner of constructing measuring scales may be fascinating as an intellectual diversion, and the scales may indeed be suggestive and possess certain theoretical interests and values; but I must submit that the serviceability for purposes of practical reliable diagnosis, of scales thus constructed is questionable. Superficial work like this is misleading and tends to arouse contempt for the slip-shod standards of scientific work obtaining in this field of applied psychology. Instead of glutting the market with measuring scales whose accuracy has not been sufficiently established by extensive testing to render them practically serviceable, it would be better if the investigator devoted his time to thoroughly testing out, standardizing, and establishing *age-norms* for *single* tests. It is this type of extensive, detailed "draft-horse" work which is now most needed.

5. The improvement of mental measuring scales involves not merely the standardization of the administrative procedure, nor yet merely the establishment of reliable age-norms for the tests already incorporated in existing scales;[14] *but it requires the addition of new tests in the various age-steps*: I have proposed ten as a reasonable number for each age;[15] *the establishment of age-norms for half-years for younger children;*[16] the establishment of various age-standards throughout

[13] Experimental Studies of Mental Defectives, pp. 21, 28, 55.

[14] Pedagogical Seminary, 1911, p. 70 ff.; Experimental Studies of Mental Defectives, p. 56 f.

[15] Experimental Studies of Mental Defectives, p. 56; *Alienist and Neurologist*, 1912, May.

[16] *Journal of Educational Psychology*, 1911, p. 206. The scheme there proposed should read as follows: "The 6-year group will include children from 5 years, 10 months (beginning of 10th month) to 6 years, 3 months (end of 3d month), while the 6½ year group will include children from 6 years, 4 months (beginning of 4th month) to 6 years, 9 months (end of 9th month)."

the scale for the *same type* of test; and the establishment of *normal norms of variation* in addition to *normal norms of performance*.[17]

Since I emphasized the advisability of testing identical traits at various age-levels by the same form of test, and thus determining the status of specific individual traits in different individuals in terms of normal age standards,[18] this need has been recognized by other writers.[19] As I have stated before[20]: "We know little at present that is scientifically accurate regarding the degree or character of the physical and mental arrest of our repeaters. We therefore stand in need of comprehensive serial graded tests of intelligence, so that we may determine not only the intellectual age of deviating children, but the nature of the mental functions most seriously affected." A series of consecutive tests, each differing somewhat from the others, which I have used with various groups of children and which can be given once annually for a period of six years, are now upon the market.

I do not think that we shall be able to test existing scales in a thoroughly reliable manner except by a wide-range method of testing multitudes of normal children.[21] We should test, at the very minimum, one hundred "normal" boys and one hundred "normal" girls at each age by years and also by half-years in the earlier ages. It would be better to set the number at one thousand for each age. That would be a gigantic undertaking requiring the concentrated attack of a large corps of trained workers, but the ultimate results which this research would yield in human conservation would well repay the toil and expense required.

[17] *Alienist and Neurologist*, May, 1912; Experimental Studies of Mental Defectives, p. 42, 104 f.

[18] *Pedagogical Seminary*, 1911, p. 76 f.; Experimental Studies of Mental Defectives, pp. 8 f., 56, 109; *Journal of Educational Psychology*, 1912, pp. 224 f.; *Epilepsia*, 1912, p. 368.

[19] Seashore, *Journal of Educational Psychology*, 1912, p. 50; and Pyle, same *Journal*, 1912, p. 95.

[20] *Pedagogical Seminary*, 1911, p. 82.

[21] *Pedagogical Seminary*, 1911, p. 81; *Journal of Educational Psychology*, 1912, p. 225 f.; *Alienist and Neurologist*, 1912, May; Epilepsia, 1912, p. 376; Experimental Studies of Mental Defectives, pp. 21, 28, 55.

SOME RECONSTRUCTIVE MOVEMENTS WITHIN THE KINDERGARTEN.

By Luella A. Palmer,

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Within the past few months interest has been renewed in the discussion of the value of the kindergarten as training for little children. This is largely due to the somewhat different methods which are being offered by Signora Montessori in her Italian schools. Many educators and parents have expressed opinions showing that their ideas of the kindergarten are based upon a belief that it holds to a certain theory and practice which in many ways and in many places have been outgrown. Where kindergartners have accepted Froebel's attitude towards education rather than confined themselves to the details of his pedagogy, there is a steady and progressive change going on which augurs well for the future of the kindergarten as an institution.

Froebel studied little children, their interests, their actions, their questions, their responses; he studied the world about him, its ideals and social forms; he studied the way in which the individual grew into acceptance of race judgments. He concluded that education ought to be the guidance of the human being toward social standards and values through the utilization of the individual energy which was seeking an outlet. In formulating this idea definitely as a method he made many mistakes according to the beliefs of today, (1) because he knew so much less than we do of the child's instincts and the development of his mental powers, (2) because social as well as educational standards and values have changed, and (3) because life itself rather than abstract formulæ has been found to present the most efficient means for education. Yet—there is so much which is fundamental and vital in even the details which Froebel suggested that through following these, educators have found it possible to take the step which now enables them to look back and pick out the flaws.

Froebel's ideas in pedagogy were so different from those prevailing in his time that the first Froebelian teachers needed to be persons of deep insight and faith to accept them. All of his ideas were received with equal enthusiasm. Since his time our knowledge of philosophy and psychology has grown and in pedagogy some of the ideas which Froebel first stated are taken as axioms. Misunderstanding of the kindergarten is arising because it is not known that

many kindergartners are discarding what is outgrown in the philosophical, psychological and scientific views of Froebel while still retaining the name, "kindergarten". It is felt that the name belongs not to any body of distinctive formulated practices but to an institution where Froebel's attitude is maintained in the education of five year old children.

The following are a few points which have only lately been accepted as truths and the realization of which has greatly influenced pedagogical practice in the kindergarten.

I. Education is a continuous process. In order to make the kindergarten felt as an influence in the educational world, it was necessary, at first, to insist on its peculiar features. When both school and community held that all education worthy of the name came through impressions gained from books, the kindergarten stood for the exercise of self activity guided in the right channels by giving materials for self expression. In order to convince unbelievers that there were values in such activity, the kindergarten had to place stress upon those results which were more in line with the accepted standards in education. Such results were the scientific facts obtained in any experiencing, the morals inculcated in the subjects of the games, or the form and number emphasized in handwork.

Now that the expression of self-directed energy is felt as the educational means for human beings of any age, the kindergarten has lost all excuse for setting itself apart. It gladly takes its rightful place as the step between the home and the elementary grades. It builds upon what the child brings from the home and by guiding and developing the interest and instincts ripening at this age, most effectively prepares him for work in the grades. Many kindergartners of the present welcome every opportunity which is offered them to cooperate with other teachers, for they know that education is as continuous as life itself and that the best education will be that which constantly appeals to the same ideals, uses the same general method and only alters its special method to respond to the changing child nature.

II. Complete development of the present stage is the best preparation for the next stage. When the kindergarten felt itself to be distinct from the school, having different ideals as well as practices, it felt that it must prepare in its own peculiar way for some distant time when its knowledge would be of value, that it must complete the lines of knowledge which it started out to give, as the next grade would ignore them entirely. This led to the telling of stories which were entirely beyond the comprehension of kindergarten children, it led to playing games too elaborate for them and

hand work containing geometrical and mathematical complications suitable for high school children.

When great fault was found with the kindergartner because she did not prepare better for the immediate work of the next grade, she felt misunderstood. She knew that the child was developing under her care by means which were vital. The pressure from above made her emphasize the more formal side of her work, for which she found full sanction in Froebel's description of the details of his method. With the introduction of stories, games and handwork in the grades, the pressure to try to complete these subjects is

TABITHA
A MEMBER OF THE KINDERGARTEN FAMILY.

removed and there is time to let the children live and learn what is most interesting to them at the present moment and to gain knowledge which is of use in the present situation.

In giving opportunities for experiences of different kinds, many a kindergartner now feels that it is her share to awaken a child's interest to the best aspects of his environment, and to help him gain enough knowledge about them to want to learn more. In other words, she tries to develop in the child an attitude of alertness to his environment, of selecting for consideration the best that there is in it and of learning something worth while about it. She does not need to exhaust its details, the child will have an opportunity to develop the subject later in the school. In the games the kindergartner is learning to give those only which the child enjoys, as she realizes

that the more advanced forms will be played afterward. It is the same with the handwork, she dares to linger over the kinds which develop the children in all directions.

The particular interest which is ripening between four and six years is the social interest. Children when they come to the kindergarten have seldom been in a group of equals of the same stage of development, although they know how to associate with those older and younger. When they enter the kindergarten they are very individualistic, they want a toy-for themselves, merely for the sake of possession. Gradually they become willing to share the toy with some other child and before they are six they gladly control themselves (for a short time) in order to be fair in waiting their turn. Many of the exercises of the kindergarten give opportunities for a child to develop in his own peculiar individual way but at other times the little citizens learn to take their places in a democratic community where each one has his fair chance. This of necessity means subordination of individual desires for the sake of justice or a combined aim.

Although this finding of one's place in a little community is developed in many of the exercises of the kindergarten, it is seen most plainly in the games. In the early games, the children all take part, performing the same action, later the children are found willing and able to take many different parts. The later games are of a more organized type, where the different parts work together to produce a diversified yet complete whole. Such games show the gradual organization of the social instinct which takes place at the kindergarten age. To deprive a child of the fellowship of his equals at this age retards his later development. Most of the experiences which he lives through should be given social channels for expression in order that his nature may receive the kind of education which is demanded to complete this stage of development.

III. Development is through actual experiencing. Froebel's great book of *method* is the Mother Play. In it he shows how the mother can educate her child by selecting for interpretation the objects in the child's environment. In this way the mother starts the child's interest in the right channels. Unfortunately the early kindergartners in America used for its *content* this book which was intended only as an indication of *method*. Instead of choosing from the environment around the American child, the experiences which would have brought to him the same values as the Mother Play did to children of Germany a century ago, Froebel was followed to the letter instead of in the spirit. As many of the topics in the Mother Play are entirely different from experiences which can be gained

here, and as the types of experience chosen by Froebel were supposed to form a sequence and a complete whole for experience, the pictures in the book were used as a basis around which to weave the thought for the week in the kindergarten. However faulty Froebel's notion may be of the act as preceding instead of being part of the idea, he was nearer the new psychology when he emphasized *act* than his followers were when they made their starting point the pictures. Words about the pictures took the place of conversation about vital experiences. As kindergarten games were at that time developed into the same sequence and complete whole for experience many of

THEIR FIRST CROP OF RADISHES.

them were divorced from the child's real interest, they were merely forms of activity through which the child was coaxed for the sake of a content and logical order which a child could not grasp.

Many kindergartners are trying to give their children actual experiences. Children in fortunate neighborhoods plant gardens and raise their own crops of quickly growing vegetables and flowers; less fortunate ones plant in window boxes and take trips to the park to play on the grass, to see the flowers. The fireman, baker, blacksmith, carpenter, grocer, toyman, living near a kindergarten are quite accustomed to annual visits from the children. On windy days groups of children may be seen flying kites or running with pinwheels; on sunny days, the same group may be seen chasing each other's shadows. Rabbits and doves have the freedom of the kinder-

garten room. Butter from the children's own churning and cookies from their own baking are served at Thanksgiving time. Dolls will be seen dressed in clothes that are crude, but these are made by the children and kept clean by their washing.

IV. The materials used in the handwork of the kindergarten are not distinctive in character. When Froebel sought to impress upon his contemporaries the educational value of handwork for little children, he found geometrical relations between certain types. As

JUMPERLY

THE KINDERGARTEN RABBIT VISITS THE PARK WITH THE CHILDREN

he was of a mystical temperament, he felt that these relations were symbolic of some inner reality and that this reality was also within man's nature. He developed a series of forms which would completely symbolize to man his whole nature. Froebel did not have time to study the child and his reaction to these types of handwork, or child student that he was, he would probably have discovered that the psychological response to them did not lead to the logical conclusions which he thought were implicit in them.

Formerly the gifts were used in a certain series of orderly ways to help the child to discover "the appreciation of the unity and con-

sciousness of the evolution of nature." Today the time which was spent in persuading the child that he realized this, is often taken in giving the actual nature experiences and helping him to express his own ideas. It is felt that only self expression which is founded upon a rich foundation of experience can be guided to organize the experience and so bring to consciousness logical values. Experiences socially shared and therefore enriched have become the subject matter of the kindergarten and the basis for expressive activities.

It is only very lately that kindergartners have dared to follow the attitude of Froebel rather than the technical details of his directions. With the denial on the part of all educators of technical knowledge as the end and aim of education, kindergartners have found

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THE PLAYHOUSE THE CHILDREN BUILT OF LARGE BLOCKS WITH BOARDS FOR ROOF.

themselves free to acknowledge boldly their new attitude toward the distinctive Froebelian materials and toward other handwork. Many have discarded whatever was uninteresting or injurious to the children such as tablets, card sewing, pricking, fine weaving, peaswork, and have substituted such occupations as sewing dresses for dolls, washing doll clothes, making toys of various descriptions as wagons, kites, or doll house furniture. Instead of "gift" and "occupation" the kindergartner is now inclined to say "manual work" as the former are technical terms and seem to indicate that there is something peculiar about the handwork done in the kindergarten.

Much of the Froebelian material appeals to the deepest and

most permanent instincts of childhood such as the blocks for building, the seeds and sticks for outlining. Where kindergarten material cannot be found, children will be seen piling spools on top of each other, making pictures with matches and edging the doorsteps with stones. The cubes and bricks of the building "gifts" with their divisions are very adaptable and supply the different proportions in the material which the child demands in his increasing control over form and balance. Kindergartners have generally been quick to detect the lack of interest on the child's part and the least interesting material has gradually been collecting dust on the top shelves.

Another modification of materials has been caused by the criticisms of physicians. The handwork which strains the eyes or uses the smaller muscles has been largely discarded. Small blocks will be replaced by large blocks as soon as funds can be raised to buy them and closets provided to store them.

New materials are being introduced which are found to be of value in developing children. Wherever possible there is construction with wood, or cardboard, and objects are made with which the children can play, such as wagons and tops. Cloth is used for sewing duster bags or dolls' dresses. A very little of the more difficult Montessori apparatus may be adapted in the near future if it is found to promote the best development of the child.

V. The child is the center of the curriculum. In the early days of kindergarten practice the "gifts" and "occupations" as well as the Mother Play were felt to contain a complete circle of knowledge. To omit one part was to break the continuity and to introduce any other was needless and perhaps harmful. The curriculum of the kindergarten was then a process through which each child had to pass regardless of what he brought to the kindergarten in the way of experience or powers. This formula was supposed to give each child the same amount of education. The curriculum centered about a certain mystical unity which was inherent in the relationship of materials and which corresponded to some unity within the child.

This feeling has given place to the idea of the *child* as the center, his instincts, interests and powers. It is the nature of the child which is to be developed in its manysidedness. The materials which are used in many places, are there now because of their psychological appeal rather than because of their logical relation to each other. They are supplied in such a way that the child will develop in the coordination and organization of his powers. Such materials as the doll and dollhouse will teach a child to concentrate and hold his own energy to one line of effort for some length of time.

FURNITURE FOR THE DOLL'S HOUSE

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Each child is considered (as far as possible with our large classes) as an individual and that particular material and method is supplied which will develop his nature toward social ideals. Formerly it was the invariable rule for all children to follow the dictation of the teacher and make the same form in the same way. Now, in many kindergartens this is done only rarely as it promotes a very crude form of social feeling to follow a self-appointed leader and all do the same thing at the same time. A much higher kind of social feeling is developed when the children are making different forms, each one of which will be needed to complete some object, for instance when the children work on different kinds of furniture for the doll's house. Another method which develops good social spirit is to let the children experiment and find out the best way to make an object, for instance a soldier's cap, and then have all copy the form best suited to the purpose; in such a case there is a vital reason for following a leader and arriving at uniform results.

The early kindergartners limited creativity to the putting together of elements, "spots, lines, angles" to make a whole. This is accidental invention. For the highest type of creation one must start with some purpose however vague, which one is inspired to desire, then pick out the elements needed to arrive at it and combine them to attain the self-determined end. Instead of dictation or arbitrary limitation in the use of material, problems are now presented to the children which seem vital to them and which they are anxious to solve. The visible results may often be the same as those achieved by the earlier methods but they have developed within the child an entirely different attitude. He becomes alert to problems in his environment and to reasoning out the ways in which they can be solved. By these means a child is developed not only individually but also socially. The bond holding the little community together is strengthened by the feeling that all have the same interests. This kind of education is useful at the present stage of development and also for the next step.

VI. Health is the first consideration in the education of little children. Most of the kindergartners have discarded the occupations which were found injurious to the children's eyesight, very few overstimulate with nervous excitable play, and practically none forget to pay attention to the demand of the little bodies for free muscular movement. Yet the crying need of our kindergartens is for still better hygienic conditions. This is seldom the fault of the kindergartner; she knows the value of fresh air and sunshine, of space for free activity, of large blocks for building, of digging in the ground, of opportunities for ind[illegible] to rest or exercise as they

desire, but many kindergartens are placed in such conditions that these good things are denied to the children.

We have grown much since Dr. Stanley Hall in the *Forum* of January 1900 criticized the kindergarten, particularly with regard to health conditions. Most kindergartners do the best they can in this respect. Wherever possible they have work in the open air, they ventilate the room, sometimes clean it themselves if janitors are careless, they keep the light out of the children's eyes, they try to have comfortable seats, to alternate periods of rest and activity, to have the atmosphere of the room quieting to the nerves, and they wash the children who come dirty,—often the first weeks of kindergarten are devoted to different methods of impressing cleanliness. At mothers' meetings the topics are care of the child, his food, rest, and play. Where the kindergartner can choose her conditions they are ideally regulated with regard to the children's health. Where the kindergarten has been annexed to the public school as the last addition, it must often take the space allotted to it—a room not wanted for other purposes. As the kindergarten session is only two and a half or three hours long it is not thought to be so necessary for the little children to have hygienic conditions as for the older ones who spend longer hours in school.

In the investigation of schools carried on in New York last year, the report on the Elementary Schools gave four standards by which to judge the effect of teaching, these were: (1) the development of purpose or motive, (2) the consideration of values, (3) attention to organization, (4) exercise of initiative. In speaking of the kindergarten it says, "Specific and childlike aims tending to call out a high degree of effort are very prominent in the kindergartens." "The kindergartner makes noticeable provision for relative values." "Most kindergartners endeavor to organize more or less random and instinctive activities of even their youngest children." "Kindergarten teachers have an enviable opportunity for encouraging the exercise of initiative and individuality of children, because uniformity is not demanded." While there are several ways in which these broad statements are qualified, the reference to the kindergarten ends with,—"We feel little hesitation in saying that the kindergarten as a whole meets the test of the four standards set up, in a satisfactory manner and that therefore the instruction there rests on the higher plane, *i. e.* it is good at present and promising for the future." Kindergartners of today welcome all intelligent criticism. It helps them to become conscious of their failings and their strong points. The encouraging words quoted above give us credit for what has been attained and inspire us to press on toward a higher goal.

SYLLABUS MAKING.

By William E. Grady,

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For what purpose are syllabi constructed, and how much of this purpose are they accomplishing? In his report to the New York Committee of School Inquiry, Dr. Frank McMurry[1] says:—

> "The syllabi, as now printed, accomplish two things in the main, *i. e.* they amplify the very brief statements contained in the curriculum proper; and they offer directions and suggestions to teachers about method. In brief, they inform merely.
>
> "Their purpose seems too narrowly conceived. What they thus present to teachers is in danger of lacking significance like much of what they recommend that teachers shall present to children. It is fair to expect that leaders in a great system of education will offer their suggestions to teachers in a way that reveals how teaching is a profession, and hence in a way, to stimulate and encourage. The information given should be subordinated to the uplift furnished.
>
> "To this end, the leading working aims and principles of instruction that control selection of subject matter and method, should be stated. It seems reasonable to assume that, if there are persons who ought to understand and hold the aims and principles of teaching in mind, it is those persons who are doing the teaching.
>
> "And these aims and principles should be so worded and illustrated that their direct influence on practice will be made clear; while the impossibility of there being in most cases one fixed and best method touching details will be established. This will involve an appeal to the teacher's judgment in selection of methods. In this way, syllabi, while giving necessary information, might surround the teacher with an atmosphere of freedom while inspiring her by their breadth of thought."

It is hardly necessary to emphasize the fact that the syllabus rather than the course of study really sets limits to the instruction given in the elementary schools. Indeed some persistent students of school conditions claim that neither the one nor the other is a

[1] McMurry, Frank. The Course of Study, p. 121. Published by Committee on School Inquiry, 51 Chambers Street, New York City.

real index of the extent and effectiveness of the teaching process.[2] The failure of the syllabi to be controlling factors cannot be ascribed to lack of variety. Some are laboriously detailed expositions; others are meagre outlines utterly lacking in that wealth of detail which would give fullness and richness to the abstract statements of the course of study. Educational salvation is not to be found in an autocratic educational policy which would prescribe uniform dosage for all educational ills, or in a *laissez faire* policy which in a large system would eventually mean the substitution of chaos for effective planning; but rather in a type of syllabus such as Professor McMurry has in mind, consistent both with limitation and with freedom.

Syllabi should contain a list of sources, informational and technical, a detailed statement of aim, suggested outlines of method-wholes, and such organization of subject matter in terms both of topics and of maximum and minimum amounts of assigned work within topics as will insure the greatest flexibility.

For purposes of illustration consider the tentative arithmetic syllabus under which the New York City Schools have been working during the current year. In general terms it may be described as a uniform maximum syllabus intended for all grades, 1A through 8B, in all schools throughout the city. In content it is little more than a bare, logical, modified spiral outline of practically all the arithmetic topics in the average textbook. Included within the syllabus are the following:

(*a*) Some statements of aim, thus,—"accuracy and rapidity" mentioned in the work outlined for 4A, and "power, accuracy, and alertness" mentioned in grades 5A and higher.

(*b*) Some suggestions as to method and algorisms, thus,—"subtraction by addition process" in 1B, "solution of problems by counting," 1A and 1B.

(*c*) Some suggestions as to the principles of arithmetic involved in the grade work, thus,—the fundamental law of fractions is stated in full in the work outlined for 6A.

(*d*) Some suggestions as to the content of problems, thus,—

[2] *See* Report on the Courtis Tests in Arithmetic, published by Committee on School Inquiry. "The real meaning (of data showing overlapping of grades) is that, so far as an individual child is concerned, to say that he has completed the course in arithmetic in the public schools is to convey no information as to his ability in even the simplest work. He may be almost an absolute incompetent, so far as practical work is concerned, or he may have acquired a degree of skill that would be adequate for any situation in which he is likely to find himself." Page 51.

"No better proof of the inability of the school without objective measurement to grapple successfully with its problems is needed than is found in the fact that if children were graded mechanically on an age basis alone—all children of from ten to eleven years being put in the fourth grade, those eleven years old in the fifth grade, etc.—the grades would be neither more nor less variable then they are at present in respect to the fundamental abilities of arithmetic." Page 138.

See also Strayer and Thorndike. Educational Administration, Chapter I, section 7, giving summary of Dr. F. G. Bonser's investigation, "Reasoning Ability of Children of the 4–5–6 Grades."

"application of these cases of percentage to profit and loss, commission, and to ordinary transactions and conditions."

To what extent such a revised syllabus prepared *in camera*, and revised *tout à fait et tout à l'heure* is an improvement over its predecessor, it is difficult to see. At best it is but a redistribution of orthodox arithmetical topics (bank discount, ratio and proportion, partial payments, square root are all retained) within the limits of an eight year course practically irrespective of what the arithmetical needs of the pupils, especially those of the upper grades, really are. If revisers would leave off thinking about the disciplinary value of arithmetic for a horde of children whose real needs are certainly neither that type nor that amount of knowledge embodied in the revised syllabus, and if the revisers would work on the basis of the criterion of utility, they would be at the beginning of an investigation which would destroy much of the traditional subject matter and which would lead either to a radically different mode of treatment of so-called business arithmetic topics, or to the reassignment of much of the time to other school subjects of greater value. Judged by the life needs of the average person, much of our arithmetic work is so distinctively cultural or disciplinary that a keen critic with a sense of humor has remarked, "Unless the pupil meets many of the arithmetic topics in the elementary schools, he certainly will never meet them or need them anywhere else." A revision committee vacillating between two possible standards of discipline and utility is apt to grow faint hearted at the mere thought of excluding a familiar topic.

Moreover the lack of definite aim not only conditions the introduction and organization of subject matter, but also tends to bring confusion into the suggested methods. Ideals like "accuracy and rapidity," "power, accuracy, and alertness," need restatement if they are to have even a nebulous significance. What content shall the teacher read into "power" and what special significance shall the teacher attach to "alertness" as a net result of arithmetical instruction? Again what degree of "rapidity" and what degree of "accuracy" is not only desirable, but attainable? Courtis in the report to which reference has been made has suggested tentative standards.

Is it not advisable to challenge some commonly accepted standards? Is "accuracy" in computation the all important end in the treatment of the so-called business arithmetic in the grades of the seventh and eighth years? For instance, is not a false ideal of accuracy in computation in such subjects as stocks and bonds, bank discount, partial payments, etc., an excuse for endless ciphering

which leads to an absolute distrust of figures because of frequent failure, rather than to a definite unified knowledge of business situations? Should we not substitute for this ideal of accuracy the more important one of the development of a real knowledge of business situations within the limits of which such number work arises? For the ordinary pupil is not this knowledge of equal if not superior value to accuracy in technical computations?

Would not a frank and definite statement of the specific aims to be attained be helpful not only to those who construct syllabi but also to those who have to interpret them? Moreover, would not such a definition of aim prevent a large amount of waste that characterizes teaching not done in the light of definitely controlling ideas?

Many students of educational theory whose judgment deserves respectful consideration, conceive a statement of aim and suggested procedure to be undesirable, inasmuch as they may tend to limit the freedom and initiative of the teacher. The partial truth involved in this position is obvious. Unless a spirit of toleration is characteristic of the system, unless supervising officials in practice as well as in theory recognize that such statements and outlines are suggestive and intended to stimulate teachers to do better and more varied work, there is grave danger that antiquated or perverted aims and methodology may lead not only to narrowness in the interpretation of the syllabi but also to downright bad teaching by those who could easily do better work if they did not feel constrained to follow suggestions. In many instances it would seem that the absence of helpful material in syllabi is not so much an index of liberality on the part of those in authority as it is an index of their lack of definite conviction and of their hesitancy to indicate the aims and methods of procedure for which they are willing to stand sponsor. Provided the contents of the syllabus are not regarded as inflexible, little harm can result from the introduction of a maximum of material.

While it is highly desirable that supervisors such as principals be invited, as they have been invited in this particular instance, to submit judgments as to the value of the tentative course of study as evidenced by the present term's work, such a general invitation would be productive of more definite and more valuable information if a questionnaire were issued for their guidance. If it were understood that such an organization of thought as is outlined below were suggested merely, the schema would undoubtedly help much to insure constructive criticisms of a definiteness and completeness that would make them available for ready analysis and tabulation.

The form which follows and which is intended primarily for the

guidance of the class-room teacher, is a concrete application of the foregoing point of view:

Questionnaire.

The Course of Study in Arithmetic under which you are working during the present term was adopted for trial for one year in order that it might be subjected to constructive criticism. The best judges of its value are the class-room teachers who use it to guide them in their work. You are therefore requested to give this matter careful consideration and file a written statement with the principal as soon as convenient. Check your judgments in terms of your class-room experience. While the points given below cover many things which would occur to you, they do not cover the entire ground. Therefore under the caption "General Remarks" please include all supplemental points which your class-room experience may suggest.

In order that your judgments may be of the greatest value, please study the grade syllabus very carefully.

This notice is sent at this time (May) in order that there may be no snap judgments but rather reflective judgments based on careful consideration of the facts.

Teacher.....*Room*.....*Class*.....

I. Type of Syllabus:

(*a*) Do you favor a syllabus that would give fuller information, such as statement of aim, algorisms, typical problems, fuller statement of arithmetical principles, modes of solution, suggestions for the conduct of the recitation?

Ex. Would it be worth while to explain the correct mode of working so as to insure "power, accuracy, and alertness"?

II. Amount of Material:

(*a*) Does the syllabus demand too much or too little of your grade?

Specify in what topics or sub-topics of the syllabus too much or too little is demanded. Specify also what maximum or minimum limits you would impose.

(*b*) Would you suggest the omission of any topics?

(*c*) Would you suggest the introduction of any topics?

(*d*) Would you suggest two courses of study, one for the regular classes, and one for special classes?

What would you include in the latter?

III. Arrangement:

(*a*) Do you prefer a spiral, extensive arrangement of material?

Ex. Common fractions taught through several grades.

(*b*) Do you prefer a topical compartment, intensive arrangement of material?

Ex. Common fractions taught thoroughly and completely in one grade.

(*c*) Or do your prefer a topical combined scheme inclusive of both?

(*d*) Have you any criticism to make with reference to the present arrangement of material in terms of your own grade and related grades?

Ex. Reduction of denominate numbers in 6B, and application of such knowledge to calculation of areas in 8A.

IV. Would you suggest a change in any of the methods suggested in the syllabus?

V. General Remarks:

Ex. On the basis of your knowledge of business practices, wherein is the syllabus deficient as regards amount of work demanded, kind of work demanded, method suggested? If your present knowledge is defective with reference to these points, will you not make inquiries among business friends, tradesmen, etc.?

What books, if any, other than the ordinary listed text-books, contain a type of problem material that in your judgment is preferable to the material in use?

REVIEWS AND CRITICISM.

A Method of Measuring the Development of the Intelligence of Young Children. By Binet, Alfred, and Simon, Th. Authorized translation with preface and an appendix, by Clara Harrison Town, Ph.D., Director of the Department of Clinical Psychology, Lincoln State School and Colony, Lincoln, Ill. 2d ed. Lincoln, Ill., 1913. Agents, Chicago Medical Book Co., Chicago, Ill. Pp. 82+15.

Dr. Town's authorized translation of the Binet scale was made from an article in the *Bulletin de la Société libre pour l'Etude psychologique de l'Enfant*, April, 1911, which is, as the translator remarks, "a brief but complete statement of the Binet-Simon method of examining the intelligence and determining the mental level of children. . . . It is in fact a convenient manual for those who wish to use the method."

The first form of the scale was published in 1905 in *L'Année Psychologique*. In 1908 appeared the first revision of the scale, the form which is most generally in use in America. Between 1908 and 1911 the scale was thoroughly tested by its originators, as well as by many other experimenters, and the revision of 1911 was the result.

Dr. Town has added to the value of her faithful translation by constructing an appendix in which she has arranged the tests in age and diagnostic groups for convenience in conducting examinations. The first edition of this manual was quickly exhausted. The second is more attractive in appearance, with better paper and wider margins, and shows the effects of careful revision as to details of typography.

Training the Boy. By William A. McKeever. New York: The Macmillan Company, 1913. Pp. xviii + 368.

The boy whose training Professor McKeever has in mind is evidently the son of people of very moderate means living in a small town. The child who grows up in the open country has been discussed by him in a separate book, "Farm Boys and Girls." On the other hand the city boy, whether he be born in a slum tenement, in a small house on a quiet street, or in a mansion on the avenue, seems to be just outside Professor McKeever's province. True, he writes of city conditions with accuracy and insight, but it is not as a native. His tone here is rather like that of the intelligent European writing of American politics.

For the boy of the small town, his occupations, pets, and playmates, Professor McKeever has an understanding sympathy. He plans for the development of "the whole boy, and not merely a part of him." He follows his career through infancy and the public school to college and to business beyond the college. Part one of his book deals with industrial training, part two with social training,

part three, habit training, part four, vocational training, and part five, service training.

It is needless to say that the book stands upon a lofty moral plane, as morality is popularly and—shall we confess?—vaguely understood. It is touched with the spirit of Benjamin Franklin, whose "Honesty is the best policy" has kept so many of us in the straight road. Professor McKeever proves his intellectual descent from Poor Richard by discussing, among other topics, "Matrimony as a Business Venture." But Franklin was a clear and logical thinker and never used such a concept as that which Professor McKeever permits himself in speaking of the boy's choice of a religious affiliation,—"the divine promptings resident within his own good heart." This superimposing of mysticism upon utilitarianism, like a Gothic spire on a Georgian dwelling, goes far to weaken the impressiveness of an otherwise excellent manual of character building.

It only remains to add that the illustrations are entertaining as well as appropriate, and that each chapter is accompanied by a useful bibliography.

A. T.

BOOKS RECEIVED

BRYANT, LOUISE STEVENS.—School Feeding. Its History and Practice at Home and Abroad. Philadelphia and London: J. B. Lippincott Co., 1913. Pp. 245. Illustrated.

DEGARMO, CHARLES.—Æsthetic Education. Syracuse: C. W. Bardeen, 1913. Pp. xi, 161.

DENNISON, ELSA.—Helping School Children. New York and London: Harper and Brothers, 1912. Pp. xxi, 352. Illustrated.

GODDARD, HENRY HERBERT.—The Kallikak Family. A Study in the Heredity of Feeblemindedness. New York: The Macmillan Co., 1912. Pp. xv+121. Illustrated.

GRAY, CLARENCE TRUMAN.—Variations in the grades of High School Pupils. Educational Psychology Monographs No. 8. Baltimore: Warwick and York. 1913. Pp. 120.

PARMELEE, MAURICE.—The Science of Human Behavior. Biological and Psychological Foundations. New York: The Macmillan Co., 1913. Pp. xvii, 443.

PUTNAM, HELEN C.—School Janitors, Mothers, and Health. Easton (Pa): Am. Acad. of Medicine Press, 1913. Pp. 201.

SCHULZE, R.—Experimental Psychology and Pedagogy. Translated by Rudolf Pintner. New York: The Macmillan Co., 1912. Pp. xxiv+364.

SIMPSON, BENJAMIN R.—Correlations of Mental Abilities. New York: Teachers College, Columbia University, 1912.

THORNDIKE, EDWARD L.—An Introduction to the Theory of Mental and Social Measurements. 2d ed. New York: Teachers College, Columbia University, 1913.

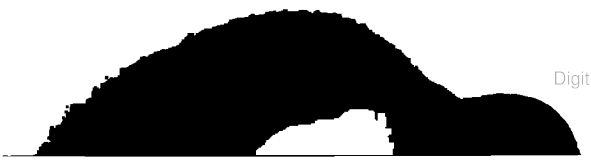
WALKER, HERBERT EUGENE.—Genetics. An Introduction to the Study of Heredity. New York: The Macmillan Co., 1913. Pp. xiv+272.

YOCUM, A. DUNCAN.—Culture, Discipline, and Democracy. Philadelphia: Christopher Sower Co., 1913. Pp. x+320.

NEWS AND COMMENT

Professor Witmer to Lecture in the West.

Professor Lightner Witmer, Director of the Psychological Laboratory and Clinic of the University of Pennsylvania, will spend the summer in the Rocky Mountains and on the Pacific Coast. During the week of June 16th he is to lecture at the University of Montana, during the week of June 30th at State Teachers College, Greeley, Colo., and from July 14th to August 1st, inclusive, at the University of California. The general subjects of his lectures at these several institutions will be "Clinical Psychology", and "Growth and Retardation".



The Psychological Clinic

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HOW A PSYCHOLOGICAL CLINIC CAN HELP A SPECIAL CLASS.

By ARTHUR HOLMES, PH.D.,

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A psychologist and a set of Binet-Simon tests do not constitute a psychological clinic; much less a medical inspector and a stethoscope; still less a school principal and a special class teacher. The essentials are rooms, instruments, social workers, clinical assistants, psychologists, plus the immense item of specialized experience, all set down in the midst of and closely connected with a host of other clinics and child-helping agencies. A psychological clinic is an inter-clinic. Socially it acts as a clearing house for special children. The nature of its function and the method of its operations make it a most necessary adjunct to the urban public school. Its business is to sort children and to sort them scientifically; or putting it more technically, to diagnose or to classify children according to their mental and moral capacities; and what is vitally to the point, to do that classifying scientifically, *i.e.* by accurate measurements and by a consideration of underlying causes.*

To illustrate more specifically I present a brief description of a few cases showing how one clinic helped a special class. The clinic was the Psychological Clinic conducted by Dr. Lightner Witmer at the University of Pennsylvania. The special class was taught by Miss Bertha F. Thompson under the able supervision of Dr. James E. Bryan in Camden, New Jersey.

The report suffers from several disabilities. First, the clinic and class were in two separate organizations. This alone militates against the highest efficiency. Secondly, they were in different localities,—in different states, in fact,—necessitating a ferryboat trip for each child. Thirdly and chiefly, since all the children

* For a further discussion of the work of a psychological clinic *see* Holmes, A. The Conservation of the Child. Phila.: Lippincott & Co., 1913.

examined were all placed in a special class prior to their visits to the clinic, the most important function of the clinic, that of making the first classification, was prevented or delayed.

Nevertheless the results are valuable in that they show what was done and suggest what might be done. They come from real children, in a real special class in a city school system. To this extent they represent conditions and not theories. In some cases what was *not* done is just as illuminating as what *was* done.

Two thoughts the reader is asked to keep constantly in mind during this article. First, no criticism whatever is intended against the Camden schools. Circumstances redounding in every way to their credit decreed that their special class be chosen as the one to illustrate the need of school clinics. The very fact that the pupils were brought to a clinic shows their progressiveness. The superintendent, Dr. Bryan, as is well known, is a pioneer student in the field of retardation. Miss Thompson, the special class teacher, was quick to see and ready to take advantage of the University clinic for helping her charges. The school board generously permitted her to take time from her teaching in order to bring the children to the clinic. In every way this school system and its administrators are thoroughly progressive, efficient, and active to their utmost.

The second thought springs from the very facts just mentioned,—that there was open-eyed perception of an opportunity, that therewas ready co-operation, that there was trained and specialized knowledge of needs and yet that five out of nine special class pupils in one year were institutional cases, that several others could not receive the full benefit of the advice given at the University clinic, that time and money were thereby wasted and possible good rendered impossible,—all of this, I say, argues profoundly for the establishment of fully equipped school clinics. Therefore I ask the reader not to be misled into thinking he is reading a criticism of any school; nor is he studying an inductive treatise proving abstractly that a school clinic is a good institution. He is being presented with a few facts, thoroughly typical, all true, and each and every one of them so charged with tragic significance that it alone is sufficient for the foundation of a school clinic, for here every fact is a human being.

With these preliminary cautions, we will take up the nine cases brought to the clinic in one year, and try to show the essential points in each case that demonstrated the need of a school clinic.

The first five children are and were always institutional cases. They present, therefore, uniquely the *raison d'être* of a school clinic. They should never have entered a public school, much less should they have consumed the time and attention they did there.

Heston, Case 325, is an example of how a clinic can effect all the items above enumerated. At the same time his case suggests what could have been done had he been taken to a clinic at six years of age instead of eleven. Luckily only one year was wasted with him in the regular classes. He was then transferred to a special class and two months after, because his teacher knew of the Psychological Clinic, he was brought there and his case diagnosed as middle grade imbecility. At the same time she received information as to the proper institution in which to place the child and the best method of placing him. Had there been a social worker in a school clinic this could have been done quickly and efficiently. As it was the teacher and school administrators gave time from their legitimate work to interest influential people in the matter and the boy was listed for a splendid school for the feebleminded in his home state.

Jabez, Case 355, is typical of what is being done in many special classes. This boy, eight years old when he entered school, was placed in a special class one month afterward and remained there about a year before he was brought to the clinic. His teacher described him on his entrance to school as a very stout boy with club foot, carious teeth, open mouth, a stolid, dull expression. He was unable to read or write, impudent, sneaky, vile-spoken, swearing, suffering frequent attacks of epileptic fits. Adenoids were diagnosed by the school physician and some improvement followed upon their removal.

At the clinic he was pronounced an institutional case, unfit to be in school with normal children, and incapable of ever using for good the little reading or writing he could acquire. He could, however, learn a trade and work under supervision at it. He was recommended to an institution for epileptics. On the strength of such recommendation his mother consented and at last accounts (November 15, 1911) papers were made out for his admission. The clinic thus saved the principal, teachers, parents, other pupils and society unknown trouble by a speedy and authoritative decision regarding the mental, physical, social and pedagogical problem involved. If the clinic had been connected with the school it could have followed up the case through its social worker until the boy was safely deposited with the state asylum officers.

Beza, Case 339, was a girl who began her schooling at seven. She was an epileptic. Her parents knew it, the neighbors knew, teachers knew, her fellow pupils had sad and frequent ocular demonstrations of it. But what could anyone or all of them do? None of them knew anything practically about epilepsy. They couldn't tell how eating much meat or candy or how school study affected the malady. All they knew was that a child must be "educated",

and so they dropped this forlorn bit of neurotic humanity into the hopper and turned the crank for two years. At the end of that time the fits were very frequent, the muscular control poor, the child could not handle a pencil or do number work, but could manage to read some words in the second reader. She told lies, swore, pilfered and mutilated the work of other children. How much society owed her in damages through neglect and injury is not known. At any rate the school did the best it could.

When Beza grew too troublesome for a regular class she was turned over to the special teacher. There in about two more years she was taught to sew, weave mats, make baskets, to read in the fourth reader and write a little. Her physical condition improved, but her epileptic seizures continued.

Then she was brought to the clinic and her real improvement began. Her teeth were cleaned and filled and the epilepsy given the proper medical attention. Under such care she rapidly improved in general health and changed wonderfully in disposition and character. The teacher was told that the ordinary school was useless for her and the only proper place for the girl was an institution for epileptics. Accordingly she was entered in a state colony where at last report she continued her improvement in general health and appearance, and in weaving, sewing, embroidery, and housework. She is merely another example of years spent in school without adequate return to herself or to society and with the inevitable dependency at the end. One important thing the clinic did. It saved society from the burden of supporting this girl's epileptic, feebleminded, or insane offspring.

Mathilda, Case 165, a girl of fifteen, had encumbered several public schools from her sixth year. She came to this special class a stout girl with defective speech and eyesight; a very nervous child, with a shuffling gait, dull, stupid, seldom smiling or laughing, unsocial but morally "good" according to school standards. At fourteen she could not read or do number work and was not good at manual exercises.

The clinic diagnosis pronounced her a cretinoid case, rapidly becoming a permanent invalid with a kidney affliction, poor eyesight, carious teeth, in need of orthopedic attention and thyroid treatment and permanent care in an institution.

She was kept on thyroid for five months. Special braces were made for her and glasses were recommended. Her general improvement was pronounced. She became more erect, walked rapidly, learned to run and jump, lost much of her nervousness, learned to read and write rapidly, improved in number work, seldom stuttered

and became sociable. Then because there was no means in the school of following up the work and securing cooperation at home, the thyroid was neglected, the improvement came to a standstill, and later ill health supervened.

This case presents a clear example of the necessity for having a completely equipped clinic in the public school system. It will be noticed that this girl had been in public schools from six to fourteen. How many hours, days and months of teachers' good time she consumed is not recorded; how many others suffered on account of her is unknown. We do know that at fourteen she was unlettered and unlearned, and her schooling practically came to naught. All those years she needed a thorough clinic examination; all those years should have been spent and if a school clinic had existed, would have been spent in health-giving treatment and orthogenic training.

At last when her real trouble was discovered by a clinic, she was too old to profit completely by it. There was no school machinery to follow up, nor to place her in a proper institution.

Rochelle, Case 356, was a boy twelve years old when he finished his six years' school career in regular classes and entered the special class able to read dime novels and to write, but wholly deficient in arithmetic. He was pale, thin, choreic, with adenoids and enlarged tonsils, and carious teeth; impudent, sly, violent of temper and poor in memory; poorly born and spoiled in the breeding.

At the clinic, after a year's special class work, besides his other defects, a weak heart was discovered. The general appearance of the boy was not at all prepossessing. His face wore a dogged, stolid, unintelligent expression; his forehead was plowed with longitudinal furrows; his body was emaciated, with marked scoliosis in the thoracic region and with stooping shoulders. His head was dolichocephalic with a low and rather narrow forehead. His eyes were deep set, but his vision was good; his nose was fairly well developed, thick at the bridge with small nostrils; his upper lip was short. His skin was not smooth and was marred in places with acne, especially on the forehead. His ears were not well developed, especially the lobes and helices. His teeth were in a very bad condition with marked malocclusion of the jaws. The heart beat was accentuated on the second sound and a decided mitral regurgitation could be heard. Nervousness, sullenness and irritability seemed to be his chief temperamental characteristics. He was very annoying in the school room, talked incessantly in a clumsy and poorly articulated manner on account of his teeth, and complained continually that people "picked" at him.

All indications pointed to feeblemindedness and his teacher

was informed of this diagnosis. On account of parental objection and other obstacles it was impossible to place him in a proper institution. He was treated for chorea, his teeth were filled and his physical condition improved. In spite of this, he remained unreliable, sly, impudent, and advanced only to third-grade mental work where he ceased to make further progress. His manual work was good and he liked his physical exercises. He is clearly an institutional case, but because of lax laws still remains in his wretched home, whence he will eventually go forth a vagabond or a criminal to increase his kind in the earth and to revenge himself without malice upon the society that is so ignorantly neglecting him.

Four more cases are now presented. They illustrate different ways in which the clinic can aid the special class teacher. It must always be remembered throughout these descriptions that the University clinic was laboring under a handicap. The most effectual act of a school clinic, namely the preliminary classification of a child and the prescription of his pedagogical training, was already attempted in these cases before they reached the University clinic. That is, they had been classified by the usual school methods in vogue for all children and trained by the usual methods first in regular grades and later in the special class. If a clinic classification had been made at the very beginning of these pupils' careers—say, when they first fell behind—altogether different results would certainly have followed. Some of our illustrative cases suffer therefore by the necessity of substituting "it might have been" for descriptions of positive results. This is especially true where some of the children had grown too old before they came to the clinic.

Gowan, Case 163, is not so much an example of what a clinic can do as what a state should do for children isolated from a section of the world by a lack of a special sense. Such children are in a sense institutional cases, but not permanently so. They can be trained to do well in the world, but to do that special institutions are necessary.

This boy Gowan was wholly deaf. At nine he entered public school. There he met no one who could tell his parents that a deaf boy could be taught to speak and read lips, and furthermore that unless he received such training he would be wofully handicapped in life, while with it not only a useful but a highly successful career was possible. After four years of class work he was transferred to the special class. His face wore a dull and stupid expression; his teeth were very irregular, and his whole demeanor childish for a boy of thirteen years. He was wholly unable to talk vocally.

About a year and a half later he was brought to the clinic and

referred to the proper hospital departments, where his ears and eyes were examined and orthodontic work undertaken. This last was completed and the boy learned to talk fairly distinctly and to read the lips of others who spoke to him daily. In other respects his progress was great. He began to play outdoor games, did fine manual work, learned reading, writing, and arithmetic very rapidly and when last heard from was developing into a healthy, happy boy.

Still, because no institution for the deaf was found for this boy and largely because people in general and even educators in general are not familiar with the enormous advantages accruing to deaf children through lip reading, this otherwise bright boy must suffer through all his life. There are men carrying on large business affairs in America today who were born deaf, or have become totally deaf, but who learned to talk and to read lips and can therefore communicate directly with anyone without awakening a suspicion of their defect. All this clinic experts know. They know too its importance and how to impress parents with it, and lastly how best to secure such education for any child. In this case of the deaf boy Gowan, there was a peculiar opportunity, one partially taken and nobly carried out by the school administrators as far as circumstances permitted. Failure was due to dearth of school organization, the lack of a clinic fully equipped, and not to absence of earnestness or zeal on the part of school teachers.

Wistar, Case 326, illustrates both what a clinic can do and also what a social worker, tactful and experienced, might do in the home. This boy ten years of age, suffered from physical defects and a weak mother. The school clinic might help both; one directly and the other through a social worker.

Wistar began his quest for education at five years of age. For four years he plodded along in a regular grade without much intellectual improvement. Then he entered the special class, a thin, pale, choreic boy partially deaf, suffering from adenoids and rheumatism, irritable, impudent, rebellious to the point of throwing books at the teacher, with no interest in study, unable to acquire more than the rudiments of the three R's.

In the special class he improved somewhat. He was circumcised, treated for rheumatism, his adenoids were removed, and his ears treated for deafness. The results were good. He began to learn, especially to write, but retained his violent temper, delighted to injure other people, to tear up pupils' work and to lie.

A year afterward he came to the clinic. He was still thin and badly nourished. His eyes were treated and glasses fitted, and treatment recommended for his general physical improvement.

He was considered a borderland case, one wavering between upgrade and downgrade, his future destination depending upon environment, treatment, and training. He had in him the making of a good citizen or a criminal. Unfortunately his home was calculated to turn him toward the latter course, and the school could not care for him more than five hours a day, five days a week. At last accounts he was learning very rapidly to read, write, and do number work, and was visibly endeavoring to control his temper. He was still physically weak; there was not much cooperation at home with the school authorities and his future was not bright. A social worker from a school clinic with its staff of specialists might have impressed the mother and saved the boy.

Cowes, Case 357, is an example of wasted years through nobody's fault in particular but to society's blame. He started early to school for a free education. From six years to twelve he labored—or rather was labored with,—according to approved methods. He learned to do simple arithmetic, write a little, but could not read. His physical constitution was weak. He was small, pale, thin, choreic, full of nervous action, but weak in musculature; pampered at home with much candy and petty license. As a result he was impudent, sly, morose, inclined to small brutalities, and easily influenced by other boys. Such was Cowes upon entrance to a special class. After two years training there he was able to do fourth grade arithmetic, to read out of a primer, and to do excellent manual work.

Then he came to the clinic. His physical defects were diagnosed and treatment recommended. He had carious teeth, indigestion, a weak heart, and hydrocele. The last his father refused to have treated, averring that he would outgrow it. Still his other treatments had their effect. He grew more cheerful, lost his former brutality, became less sly, more self-reliant and respectful, did excellent work in arithmetic, learned to read fairly well in the second reader, loved manual training and physical exercises.

The sad part is that all these improvements came so late. He was then fourteen and ready to leave school, fourteen years being the legal age for him to begin life as a wage earner. Yet anyone who saw the change wrought in this boy by a clinic examination and two years of special training could not help speculating upon the chance he had lost forever to become a sturdy and intelligent citizen instead of one always bordering on pauperism by reason of unpreparedness for work.

Sallie, Case 340, is another case of long schooling and slow progress, who happily found help in the clinic. She first came at the age of thirteen after nearly two years of experience in a special

class preceded by four years in the grades where she learned to read the third grade reader and do first grade number work.

When she came to the clinic first she was very small for her age, a pale anemic child with bad teeth, poor eyesight, enlarged adenoids and tonsils, was dull and sleepy, had spells of stubbornness heart-breaking to a teacher, but possessed an excellent moral character otherwise.

By clinic advice and assistance glasses were fitted to her eyes, her teeth were treated, and the nervous and intestinal troubles received the proper medication. The results were gratifying to all. The girl took an interest in her work especially sewing, physical exercise, singing and games and her disposition was much improved. Her powers of doing mental work had so increased that she was returned to the regular third grade, which of course was very low for one of her age.

What was accomplished in this girl's case was but a small indication of what might have been done by a school clinic when she was six or seven years old. Her disabilities were chiefly physical and removable. Had the school possessed means of treating them, the waste of time, money, and human life could have been avoided. Because it did not possess this means, Sallie, typical of many more, must be handicapped for life.

Finally to sum up these illustrative cases,—five of them were children who should have been sent early to institutions for life-long care and training. No attempt should have been made to perform the impossible task of educating them in a public school, or to make them self-supporting, or to put upon them the mental stamp of public approval, or to release them to prey upon society through an inevitable degenerate posterity. The years of trying effort made for them were wasted years and the results were worse than *nil*.

Another case was temporarily an institutional case. That is, the deaf boy should have been trained in a school for the deaf. Another child, Wistar, was very materially helped by his special class and helped especially in those matters affected by a clinic. He was left wavering in the balance because the school had no machinery to protect him from a weak mother. The last two cases were helped materially both by the special class and by the clinic. These nine children spent an aggregate of forty-seven years in school at a cost of over $1056.00, passed through about a total of thirty-six grades in reading, writing and arithmetic, an average of one and one-third years' school progress for each pupil, none beyond the fourth grade, and yet not one pupil was really ready for self-support in the

world. Compare this with the record of one normal pupil at fourteen years of age, with eight years in school, costing $176.00, with a total of twenty-four grades in the three subjects and many more in other subjects, and ready to enter high school or to begin his work in the world.

Possibly in all this matter, we have overlooked two great classes helped by an authoritative diagnosis. These were the teachers and the school administrators. After the clinic diagnosis they were satisfied about each child. They could proceed with assurance. Henceforth they worked with the authority of specialists behind their efforts. With this they met parents' objections, influenced public institutions and secured the interest of friends. By means of it they coordinated and focussed their efforts upon essentials and made every iota of their work count for good. If a clinic could be organized within every urban school system already almost supplied with the essential parts of such an organization, it would bring the most profitable administrative and pedagogical results and that with no additional expenditure of energy or money.

THE BINET TESTS APPLIED TO DELINQUENT GIRLS.

By MARGARET OTIS, PH.D.

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The efficacy of the Binet tests has been proved a number of times in a number of different ways. Their use is being widely extended and of late they are being applied to the study of criminals and delinquents. That a large percentage of delinquents of both sexes are defective is well known. The problem of what to do with the defective delinquents is before the public now as never before. The scientific study of this class has been started in a number of institutions, and if psychology can help in throwing light on this important subject, it will have proved beyond question its great usefulness to the world. Such study has recently been begun in the New Jersey State Home for Girls.

A preliminary testing of the girls with the Binet tests shows interesting results, and corroborates the results obtained in other institutions. One hundred and seventy-two girls of the institution were examined. These were white girls with only two exceptions, and not many of the smaller girls were included. The average age of the girls examined is 17, the ages being distributed as follows: age 20—19; age 19—14; age 18—32; age 17—32; age 16—26; age 15—19; age 14—18; age 13—5; age 12—5; age 10—2. From the results of the testing a three-fold classification seemed advisable. Not many of the girls could answer all the questions, and the scale being standardized for twelve years only, those who stand between eleven and twelve have been considered as practically normal, while those who stand below ten mentally by this scale are classified as without doubt defective, for if a girl of the ages given above cannot pass more than the nine-year-old tests, it is fair to assume mental defect. This defect is further corroborated by other tests and by investigation of the heredity. For convenience those who attain the mental age of ten, but fail to reach eleven are classified as high-grade morons.

These girls of ten-year-old mentality show themselves surprisingly true to the moron type established and described in other places. They are very capable when working under direction and can be trained to be good servants, but fail lamentably to establish themselves in a good way of living if left to themselves. They lack

initiative and need care to protect them from the temptations to which they are subject when they go out into the world.

The classification of the girls tested is as follows:

Class I Defective	77	45 per cent
Class II Morons	52	30 " "
Class III Presumably normal	43	25 " "
Total number tested	172	

A further study of the results of the testing produces interesting information as to the mental status of the girls. The number of correct answers to each question has been tabulated, and the percentage estimated, not only for the whole group, but for each one of the three classes.

That the percentages show a regular increase from class I to class III is an indication of the accuracy of the scale. The only questions where a rising value is not found is the unimportant change in IX-3 of 71—96—95. This matter of knowing the date is more a test of general information than of mental capacity, so that it is not surprising that there is no marked difference in this matter between class II and class III. Also in the case of XII-4, the figures 38—62—61 show that there is not much difference between the ten and eleven year old mentally in the matter of resisting suggestion. It may be that this ability of mind is not confined to a certain age. Other than these two cases there is a regular increase in the percentage of correct answers from class I to class III.

The most difficult tests for all the girls examined, as shown by the low percentage of correct answers, are the following: VII-2 description of pictures (action); VIII-2 counting backward 20—1; IX-2 definitions better than use; IX-5 arranging weights; X-2 drawing design from memory; XI-2 sentence; XI-5 dissected sentences; XII-3 repetition of sentence.

The most difficult for the girls of class I are as follows: VII-2 description of pictures (action); VIII-2 counting backward 20—1; IX-2 definitions better than use; IX-5 arranging weights; X-2 drawing design from memory; XI-2 sentence; XI-5 dissected sentences; XII-2 definitions of abstract words; XII-3 repetition of sentence.

The most difficult for the girls of class II are as follows: VII-2 description of pictures (action); IX-2 definitions better than use; IX-5 arranging weights; X-2 drawing design from memory; XI-2 sentence; XI-5 dissected sentences; XII-2 definitions of abstract words; XII-3 repetition of sentence.

TABLE I

Binet question.	Percentage of correct answers			
	Class I	Class II	Class III	All together
VI-1	91	100	...	93
2	100	100	100	100
3	94	100	...	95
4	100	100	...	100
5	100	100	...	100
VII-1	100	100	...	100
2	86	86	100	87
3	98	100	...	98
4	91	100	100	94
5	100	100	...	100
VIII-1	88	100	100	93
2	73	94	100	81
3	95	100	100	96
4	86	94	100	88
5	84	98	100	92
IX-1	66	87	100	71
2	23	52	90	45
3	71	96	95	83
4	83	96	100	89
5	29	68	85	51
X-1	64	98	100	83
2	14	28	57	28
3	67	90	100	83
4	37	85	97	66
5	28	83	93	61
XI-1	25	60	88	51
2	13	53	66	38
3	25	68	83	53
4	23	51	78	45
5	0	9	61	18
XII-1	36	62	85	58
2	5	36	73	45
3	0	7	15	6
4	38	62	61	52
5	18	42	73	41

The most difficult for the girls of class III are the following: IX-2 definitions better than use; IX-5 arranging weights; X-2 drawing design from memory; XI-2 sentence; XI-5 dissected sentences; XII-3 repetition of sentence; XII-4 resisting suggestion.

On the other hand, the easiest tests to answer for each group, as shown by the high percentage of correct answers, are as follows: The easiest for all the girls together: VII-1 counting thirteen pennies; VII-5 recognition of color; VIII-3 repeating days of week; IX-4 repeating months of year; X-1 knowledge of money; X-3 comprehension of situations. The easiest for class I are: VIII-3 repeating days of the week; IX-4 repeating months of the year; X-1 knowledge of money; X-3 repeating figures. Class II, IX-4 repeating months of the year; IX-3 knowledge of the date; X-1 knowledge of money; X-3 repeating figures; X-4 comprehension of situations. Class III, IX-1 making change; IX-4 repeating months of the year; X-1 knowledge of money; X-3 repeating figures; X-4 comprehension of situations; XI-1 seeing absurdity; XII-1 repeating figures.

A study of what questions are easy for the girls to answer, and of what are hard, in this way, reveals the fact that they are lamentably deficient in the tests involving the use of language; but stand better in the number tests and those involving general information. The tests may be roughly classified into the following groups: (1) Those involving the use of words or language. These are: VI-2, VII-2, VIII-1, IX-2, X-5, XI-2, XI-3, XI-4, XI-5, XII-2, XII-3. (2) Those involving the use of numbers. These are: VII-1, VIII-2, VIII-4, VIII-5, IX-1, X-3, XII-1. (3) Those involving comprehension or some reasoning ability, *viz.* X-4, XI-1, XII-5. (4) Those that involve general information, such as one living in a normal environment naturally acquires. These are: VII-3, IX-3, IX-4, X-1. Arranging the percentages of correct answers of the total number of girls examined under these heads, we obtain,— (1) 87, 93, 45, 61, 38, 53, 45, 18, 53. (2) 81, 88, 92, 71, 83, 58. (3) 66, 51, 41. (4) 96, 83, 89, 83. We have omitted from this arrangement the perceptibly easy where there are all 100's, and the extremely difficult one among the language tests, that is, XII-3. The latter is recognized as too difficult a test by all who have used the scale, and so perhaps it is not fair to take it into account. We can see that the percentages for the language tests are notably lower than those in the other groups. Averaging the figures given above, we have for the language group a general average of 54.7, for the number group 78.8, for the comprehension group 52.6, and for the general information 87.7.

The fact that the girls stand highest on the general information

tests and those involving the use of figures, but fall lowest on tests involving the use of language may further be shown by a study of the percentile curves for the different groups.

Curve I. This is for all the girls examined, a total of 172. We see here the first important dip is at VII-2 description of pictures. The second dip is at VIII-2 counting backward. Then follow dips at IX-2 definitions better than use; IX-5 arranging weights; X-2, design; XI-5 dissected sentences; XII-3 repeating sentence.

Curve II. This is for the normal girls of class III. The dips occur at IX-2 definitions better than use; IX-5 arranging weights; X-2 design; XI-2 sentence; XI-5 dissected sentences; XII-3 repeating sentence.

Curve III. This is for the moron group of class II. The dips here occur at VII-2 description of pictures (action); IX-2 definitions better than use; IX-5 arranging weights; X-2 design; XI-2 sentence; XI-5 dissected sentences; XII-3 repeating sentence.

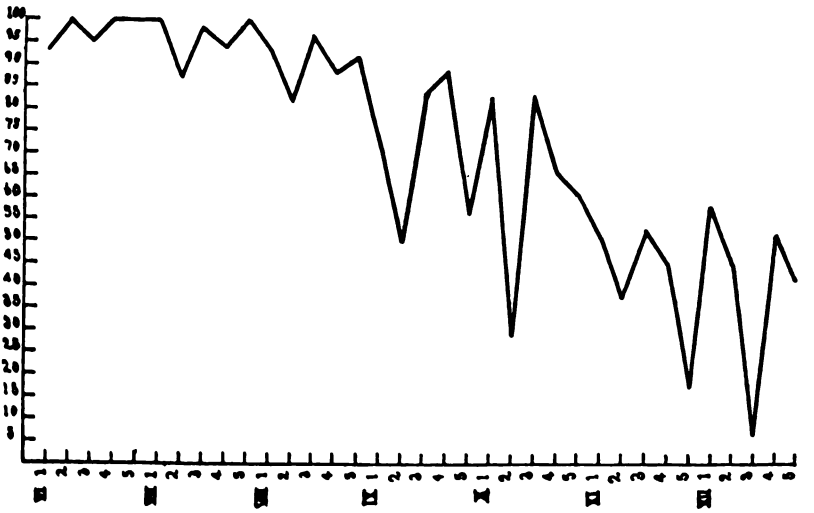
Curve IV. This is for the defective group of class I. The dips occur at VII-2 description of pictures; VIII-2 counting backward; IX-2 definitions better than use; IX-5 arranging weights; X-2 design; XI-2 sentence; XI-5 dissected sentences; XII-2 definitions of abstract words; XII-3 repeating sentence.

The big dips are of course more significant than the small dips. These are notably, IX-2 definitions better than use; IX-5 arranging weights; X-2 design; XI-5 dissected sentences; XII-3 repeating sentence.

But some of these tests have also been found difficult for normal children, for instance the design in X-2. Likewise the sentence in XII-3, as has already been stated, is too difficult for those of twelve year old intelligence. The reason why so many of our girls fail on the arranging weights is no doubt due to the fact that most of the girls are over twelve years of age. It is admitted by all that this test is easier for children than for adults, for the reason that the child has fewer standards of comparison, while the adult is more apt to waver in his judgment owing to the greater number of comparisons that enter his mind causing confusion. This point is further corroborated by Katzenellenbogen's testing of epileptics where he finds the same thing to be true.* Thus the fact that this test has a low percentage of correct answers is perhaps not particularly significant as regards the mental status of the girls. On the other hand however, that so many of the language tests are difficult for them is very significant, and this deficiency is further corroborated by the work that they do in school, and by the testimony of the officers

*Katzenellenbogen: Critical Essay on Mental Tests in their relation to Epilepsy, p. 17.

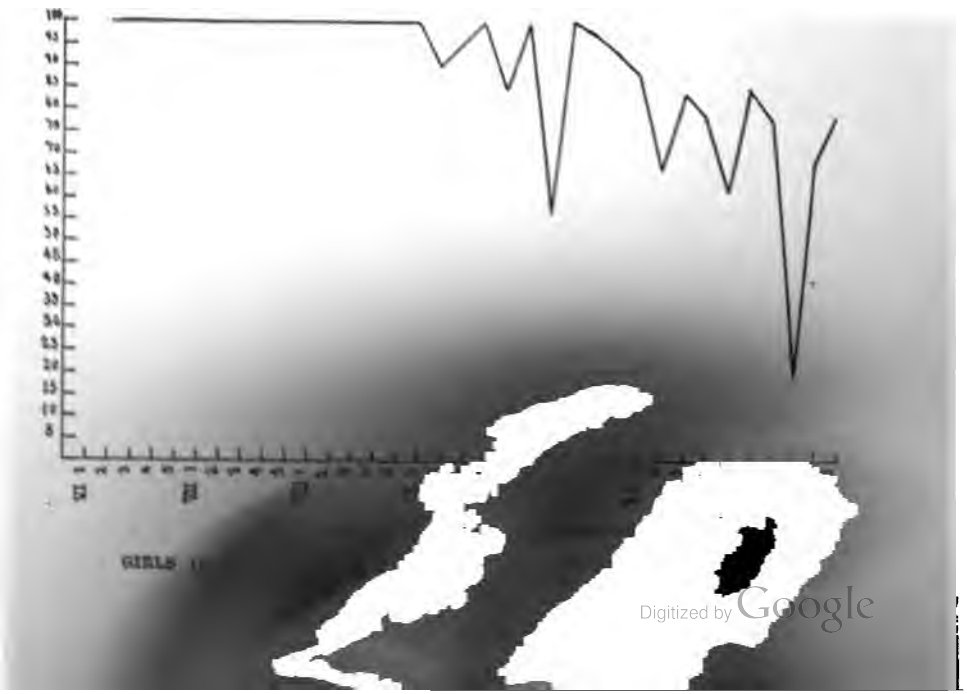
CURVE I.



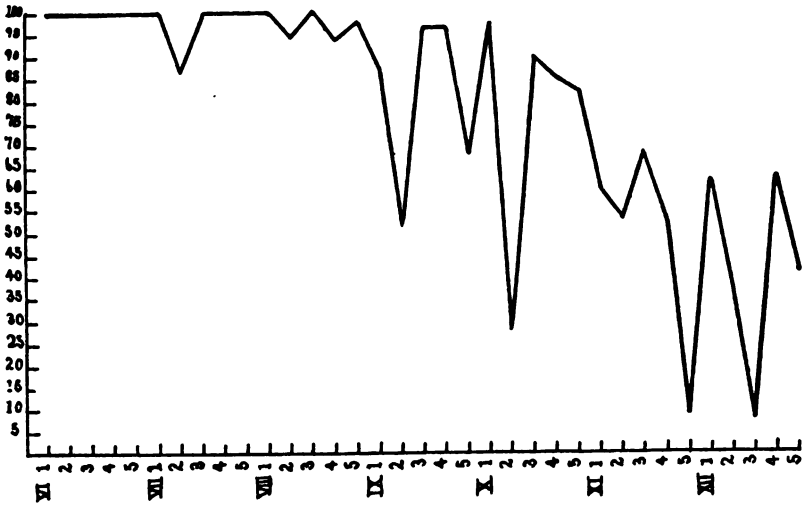
PERCENTAGE OF CORRECT ANSWERS.

TOTAL NUMBER OF GIRLS EXAMINED 172.

CURVE II.



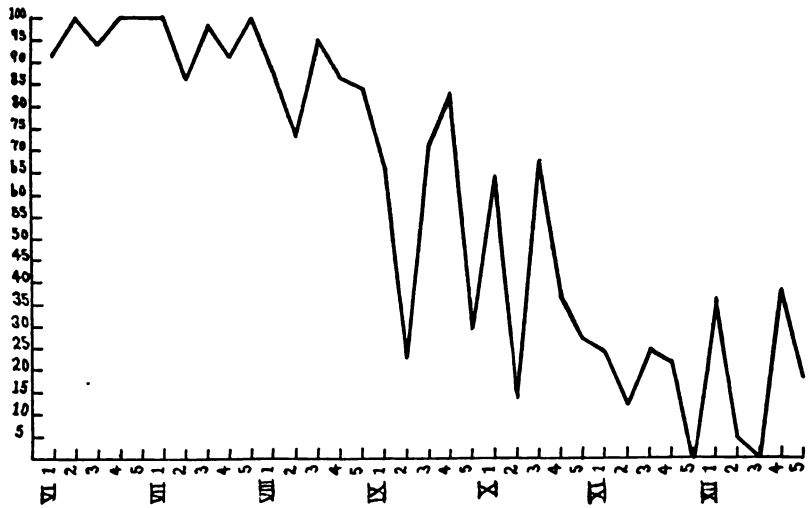
CURVE III.



PERCENTAGE OF CORRECT ANSWERS.

GIRLS IN CLASS II, MENTAL AGE 10. TOTAL NUMBER 52.

CURVE IV.



PERCENTAGE OF CORRECT ANSWERS.

GIRLS IN CLASS I, MENTAL AGE 7-9. TOTAL NUMBER 77.

who have them in charge. The girls come from a class in society where fluency in language is not a pronounced characteristic. They have had no training in expressing thought either at home or at school, for in examining the question of school training we find that most of the girls have had little or none. The average age of the girls examined, as has been stated, is 17, while the average age at which they leave school is 13. The distribution of the latter is as follows: 17—1, 16—6, 15—11, 14—34, 13—26, 12—16, 11—10, 10—5, 8—1. The average grade of school work reached is the fourth. The distribution here is: 8th—4, 7th—13, 6th—14, 5th—23, 4th—41, 3rd—37, 2nd—11, 1st—9. Four girls of the total number reached high school, while seven had no schooling whatever. Fifty-seven left school before reaching the age of fourteen.

With such limited school training, it is no wonder that the girls lack the ability to express themselves, and show themselves deficient in the language tests, for the ability to use language depends more than any other on training, whether at school or at home.

This is not to be understood as destructive criticism of the Binet tests. The tests are very valuable when rightly understood. Yet these tests alone do not tell all we wish to know about delinquent girls. The initial step only has been taken in this work. We can only say that as far as the tests have been applied, an alarming state of affairs is revealed in the fact that such a large percentage of the population is unable to take care of itself, with the likelihood or rather certainty that the stock of defectiveness and illiteracy is on the increase.

ACCURACY OF PUPIL REPORTING.

By J. C. Lewis, K. J. Hoke, J. B. Welles, and G. M. Wilson,

Teachers College, New York City, N. Y.

During the past few years many studies in education, particularly those concerning retardation and promotion, have been based upon the answers given by children to questions asked by the investigators. While this method of collecting data has been known to be inaccurate, no one has attempted to see how much the error was nor in which direction it lay, that is, whether it was in favor of the school examined or not. In order to get some idea of this problem, a study was made among the school children of a city near New York,* who had attended the schools for the past six years and whose cumulative record cards for this period were complete. The children were a selected group in that they had spent their entire school life, six years in extent, in this particular school system. It was found however on careful examination that the selection with regard to race and financial circumstances was really a random one. The age distribution as well as the grade distribution was normal. The distribution by grades was,— grade three 9, grade four 33, grade five 54, grade six 74, grade seven 5, grade eight 1, total 176. The distribution by ages was,— 5 nine years old, 41 ten years old, 71 eleven years old, 42 twelve years old, 12 thirteen years old, 4 fourteen, 1 fifteen; total 176. There were 63 boys and 93 girls, total 176.

The pupils were asked to fill out the following blank, and the returns were secured from 137 of the 176 children in the six year group:

Name.....

1. Have you ever skipped a grade?.....
2. What grade or grades have you skipped?.....
3. Have you stayed two or more years in any grade?.....
4. In what grade or grades have you stayed more than a year?.....

.....

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* The authors desire to recognise their indebtedness to Dr. G. D. Strayer, Department of School Administration, Teachers College, under whose direction this study was undertaken, and whose co-operation made it possible. The original data for this study are on file in Dr. Strayer's office.

To avoid too much disturbance and to have the questions answered under normal conditions, the teachers gave them out and returned them to the investigators. In one school the children were assisted by the teachers in recalling their school-life, and in another school the children had been cooperating with the principal in the correction of their record cards just previous to this study. These facts would tend to make a slightly larger percentage of the answers correct.

The investigators carefully examined the cumulative record card of each pupil and checked the answers accordingly. In checking up the answers, if the pupil said that he was retarded one year in the second grade, but was recorded as having been retarded one year in the first grade, his answer was accepted as correct. This liberal construction tends further to make the percentage of correct answers too large. If the pupil reported an answer in any other way than that shown above, it was considered incorrect. Table I shows the results in detail.

TABLE I.

ANSWERS OF 137 SCHOOL CHILDREN.

Normal Children			Accelerated		Retarded					
Correct	Incorrect		Correct	Incorrect	Correct	Incorrect				
	Say ret.	Say accel.		Say normal		Say normal	Say accel.	1 yr. too few	2 yrs. too few	No ans.
51	2	2	3	1	31	27	17	4	4	6

A double scoring was used in the case of double retardations and promotions. By this method the actual number of pupils' answers will be found to exceed the number of pupils by eleven. Reading the table from the left we find that of the normal children fifty-one gave correct answers, four incorrect; two of these saying that they had been retarded and two accelerated. Of the accelerated children three answered correctly and one incorrectly, the one saying that he was normal. Of the retarded children, we find that thirty-one answers were correct, and of those answering incorrectly, twenty-seven said that they were normal, seventeen that they were accelerated. Four reported that they had been retarded, but reported one year less than the records showed and four two years less than the records. Finally we find that six gave no answer at all. Reducing this table to a percentage b[illegible]ting it, we find that 93 per cent of the children who v[illegible]ered correctly,

while 3.5 per cent said that they were retarded. Among the accelerated children the small number of cases distorted the percentages; one child said that he was normal.

The most significant facts were found in the answers of the retarded children. Sixty-five per cent of the answers were incorrect. This percentage was distributed among the different mistakes as follows: 30 per cent reported normal progress, 19 per cent said they were accelerated, 4.5 per cent reported one year less than they had actually been retarded. Another 4.5 per cent reported two years less retardation than they had actually had, and 7 per cent gave no answer. It may be evident therefore that normal and accelerated pupils usually know what happened to them, but retarded pupils do not recall readily their past life in school. The fact is brought straight home to every school man that no accurate study of grade progress can be made without fully kept cumulative record cards.

Let us apply the results of this inquiry to a well known study based upon the answers of pupils as to retardation or failure,—"The Incidence of Retardation" by Dr. Louis B. Blan (Teachers College, 1911). This appealed to the writers as a splendid study; but their scientific interest led them to the plan as described above for checking up, for proving or disproving the results.

Blan studied 4579 children as follows: a New York City district, 1312 cases; Elizabeth, N. J., 1088 cases; Paterson, N. J., 1246 cases; East Orange, N. J., 448 cases; Plainfield, N. J., 485 cases. By a method identical with our own as shown by an examination of Blan's paper, pp. 22, 32, and 36, the 4579 selected pupils in the five cities were studied as to the grade distribution of the 3947 cases of retardation. These were reduced to a percentage basis for each group and then the median of the five groups calculated. This median for the fifth grade pupils is:

Per cent of failures in the					fifth	grade.....	11.2
"	"	"	"	"	fourth	"	9.2
"	"	"	"	"	third	"	7.2
"	"	"	"	"	second	"	6.6
"	"	"	"	"	first	"	7.2

Since our study tends to show that in the lower grades these figures are much too small, it is only fair to call attention to the evidence in Blan's own study tending to support the conclusion which we reach. We are surprised that so careful a student should have neglected

this evidence, tending as it does to prove the unreliability of a pupil's report as to his own failure, a conclusion which if substantiated would invalidate his entire study.

Blan says (p. 31): "Each pupil was asked to state in what grade or grades he had been kept back for a second term. In the event of the pupil's inability to remember accurately, a note was made of such inability and recourse was had to the record card filed in the office of the principal. Such action was necessary in 32 out of 1312 cases and the writer was particularly fortunate in obtaining full records of same."

The above quotation shows how little use was made of the cumulative record cards in checking up pupils' answers.

Blan (p. 52) notes that the higher the grade the fewer failures there are reported for lower grades, but it does not seem to occur to him that this failure to report may have been due to the inability of pupils to remember the failures that occurred so many years before. Blan says: "In fine, then, it may be said that the fourth or fifth grade pupil is left back in the third grade more than twice as often as the eighth or seventh grade pupil."

In Plainfield, N. J., there were cumulative record cards which Blan could have used, but of which he made little use. It appears however that they had some effect in helping the memory of pupils. The 485 pupils in this system reported 616 failures, or a larger proportion than in any of the other systems involved in the study. The first grade failures reported in this system are from five to eight times the median per cent of the other systems, and range from 30 to 39.2 per cent. In connection with this system Blan says: "The writer, however, visited each class room of the fifth, sixth, seventh, and eighth grades and questioned the pupils individually as in the other cities. . . . Their memory seemed to wane only in the case of the primary grades. . . . Wherever it was found that pupils deliberately misstated the facts, their records as read from individual history cards were invariably *somewhat worse* than they cared to admit. For example, when pupils replied that they were left back a given number of times, on checking up their statements it was found that in no case were they left back less than they stated. On the other hand, in *quite a number of instances* their history cards showed one or more retardations above the number admitted by them in class."

The values to be attached to the expressions "*somewhat*" and "*quite a number*" in the above quotation can be best estimated from the details of table I of this study. It must be evident that if per cent of pupils' answers as to retardation are incorrect, the

only profitable way in which to study this question is through an examination of the individual cumulative record cards.

Let us proceed a step further by distributing the retardations as actually occurring and as reported by the children, and then apply these facts to Blan's study. Table II shows the distribution of reported and unreported failures, and the total of the whole number actually occurring.

TABLE II.

	Number of Retardations reported					Number of Retardations not reported					Total Retardations.				
Grade.....	V	IV	III	II	I	V	IV	III	II	I	V	IV	III	II	I
V.....	1	3	3	6	7		1	3	8	14	1	4	6	14	21
IV.....		1	1	5	12		1	1	16	22		2	2	21	34
III.....			1	1				2	4	13			3	5	13

Taking the first line, table II reads, beginning at the left, the fifth grade pupils reported 1 retardation in grade five, 3 retardations in grade four, 3 in grade three, 6 in grade two, and 7 in grade one; and they failed to report 1 retardation in grade four, 3 in grade three, 8 in grade two, and 14 in grade one; the distribution of total failures among fifth grade pupils being 1 in grade five, 4 in grade four, 6 in grade three, 14 in grade two, and 21 in grade one.

The next line of table II shows the distribution of fourth grade retardations; the last line, the distribution of third grade retardations. It will be seen from the table that fourth grade pupils report more inaccurately than fifth grade pupils, and that the third grade pupils do poorest of all.

The only place where this table overlaps Blan's is in the fifth year. It will be interesting therefore to calculate the incidence of retardation for the fifth grade and compare the results with the figures in Blan's table. Since Blan used pupils' reports, however, it will be proper for us to use pupils' reports in making the comparison. This comparison is shown in table III.

This table is derived directly from table II. The 4.7 per cent under grade I of table III, simply means that 7 in table II is 4.7 per cent of 148,—148 being the total number of cases involved, including normal, accelerated, and retarded, each retardation being counted as a separate case. Likewise 6 in table II is 4.0 per cent of 148, etc.

TABLE III.

SHOWING THE INCIDENCE OF RETARDATION FOR FIFTH GRADE PUPILS ACCORDING TO THEIR OWN REPORTS.

Grade	V	IV	III	II	I
As per pupils' reports.....	.7	2.0	2.0	4.0	4.7
Blan, based on pupils' reports.....	11.2	9.2	7.2	6.6	7.2

Table IV is derived from table II in the same manner, but the totals for grade V are used. That is, 21 is 14.2 per cent of 148; 14 is 9.5 per cent of 148, etc. The fifth grade incidence of retardation thus derived is based upon the total retardations, the retardations reported by the children plus those not reported. The figures showing the corrected incidence of retardation for Blan's study are

TABLE IV.

SHOWING THE CORRECT FIFTH GRADE INCIDENCE OF RETARDATION FOR THIS STUDY, AND THE CORRECTED INCIDENCE FOR BLAN'S STUDY.

Grade	V	IV	III	II	I
This study as per record cards	.7	2.7	4.1	9.5	14.2
Blan,allowing for errors of pupils' reports	11.2	12.4	14.7	15.7	21.7

secured by simple proportion in each case, and assume that the reporting of pupils in his study was inaccurate to the same degree and in the same direction as the reporting of the children in this study. If this assumption is correct, and Blan's own study bears evidence that it is, the conclusions reached by Blan are equally unreliable. The situation as to failure in upper as compared with lower grades is exactly reversed.

It is not necessary to pursue the discussion further. While this study is not conclusive, it points strongly towards the following conclusions:

First.—Pupils' reports as to progress through the grades are likely to be very inaccurate.

Second.—The inaccuracies are greatest in the lower grades and where failure is involved.

Third.—Conclusions as to the progress of children through the grades when based upon the reports of children are therefore more or less inaccurate and may be directly contrary to the facts.

Fourth.—As the cumulative record card is being more and more generally introduced, we are justified in insisting that future studies as to the progress of children through the grades shall be based upon the evidence furnished by such card.

NEWS AND COMMENT.

A New Development in Evening Classes.

In Philadelphia where night classes have flourished for years, a movement has recently been set on foot to broaden and standardize the work in the different schools, and to bring it more prominently before the attention of the public.

Representatives from the Y. M. C. A., Drexel Institute, Franklin Institute, School of Industrial Art, Spring Garden Institute, Wagner Institute, Temple University, with the Philadelphia Trades School and the Evening Public Schools of Philadelphia and Camden, met together last spring with the purpose of getting the schools better acquainted with each other's work and gaining the cooperation of the employers of labor. Later, in order to avail itself of the wide resources of the Public Education Association of Philadelphia, the Conference organized as a section of that association, with its own officers, to be known as the "Industrial and Technical Education Conference of the Public Education Association". The membership consists of educators and employers, and the object is the solution of some of the problems which arise in connection with the further training of young people who are forced to leave school to go to work before they have completed their education.

This combination has resulted practically in bringing together all the schools giving evening instruction. These schools, which are semi-private in character, have gone so far as to issue joint advertisements, through posters and through the public press. The posters have, with the consent of the employers, been placed conspicuously in all the large manufacturing and business establishments. Under the new arrangement the Public Education Association serves as a clearing house for information in regard to industrial and technical opportunities offered in all the schools throughout the city.

An important result of the conference was a meeting held on Monday evening, September 22d, of all municipal employes in Philadelphia, in the interests of advanced education. The object was to bring to the attention of the men employed in various departments of the city, the means by which they may equip themselves for positions of greater efficiency and higher responsibility. The opportunities now offered were presented in brief addresses by the heads of the departments and the officers of the conference, and by means of informal discussion with employes, suggestions were obtained as to the possibilities of enlarging the field so as more fully to meet their needs.

Genuine Vocational Training.

The school authorities of Lansing, Michigan, have devised a capital plan for keeping boys in the public schools, at the same time giving them a real vocational training. Any boy who has completed the eighth grade may enter for the "Industrial Cooperative Course," or any boy who has completed one year's work in any high school may take the course and begin his shop work at once. The course is of four years' duration. The first year is all school work; the second year and every year thereafter the boys work in pairs, one boy being at the shop while his mate is at school. These boys alternate weekly, and in this way the jobs at the shop and the classes at the school run along smoothly without any interruption.

Every boy is given a trial of two months beginning immediately at the close of school in June. If he likes the work and shows aptitude for it, he continues the course; otherwise he drops out and if he chooses may take up some other course in the high school. This gives the boy an opportunity to find himself,—something quite generally lacking in the schools. The shop work includes instruction in all the operations necessary to the particular trade in which the boy is interested.

The boys receive pay for the time actually spent in the shop. For the first year in the shop (the second year of the course) they receive ten cents an hour, for the second year twelve and one-half cents, and for the third year fifteen cents. Their work in the shop covers a total of about 1650 hours a year. The value in money of this course to each boy is therefore $165.00 for the first year (the second year of the course), $206.25 for the next year, and $247.50 for the last year. The value in opportunity and efficiency would be very difficult to estimate.

It is obvious that this work offers a strong inducement for the boy to continue in school. The chance to earn money gratifies his natural desire for independence, and to some extent lifts from the shoulders of his parents the burden of keeping him in school. During vacation work is usually provided in the shops, which adds to the boy's yearly income while keeping him occupied and off the street.

A strong feature of the Industrial Cooperative Course is the agreement entered into by the boy and his employer. If after the trial period of two months the boy is satisfied that he wants to learn the trade, his parents agree that he shall stick at it for three years, and the manufacturer on his part agrees to teach him the various branches of the trade designated in the agreement. The arrangement is mutual; each party is bound to give the other a square deal. It is a business contract to be respected; and only in those places where this written agreement between apprentice and employer is in force, has success been attained.

Upon the completion of the full course the boy receives a high school diploma signed by the school officials as well as by the superintendent or manager of the factory in which he has served his time. As a further token of the manufacturer's appreciation of his faithful work the boy is given a purse of fifty dollars.

The course of study is as follows: First year (all school work), English

and current events 5 hours, arithmetic 5 hours, algebra 5 hours, mechanism and mechanical drawing 13 hours. Second year (half time), English 5 hours, shop mathematics 5 hours, algebra and geometry 4 hours, physics 4 hours, civics 2 hours, mechanism and mechanical drawing 10 hours. Third year (half time), English 5 hours, shop mathematics 5 hours, chemistry 4 hours, first aid to the injured 1 hour, mechanism and mechanical drawing 10 hours. Fourth year (half time), English 5 hours, commercial geography and business methods 2 hours, physics, electricity and heat 4 hours, chemistry 5 hours, mechanism and mechanical drawing 10 hours, shop mathematics 4 hours.

The first year's class, 1912–13, was made up of twenty boys. This year, 1913–14, twenty-five boys have applied for the course.

Medical Milk Commissions and Certified Milk.

This is the title of the first bulletin in the new departmental series of the U. S. Department of Agriculture. It is a contribution from the Bureau of Animal Industry, and is a revision of a previous bulletin on the same subject.

The organization and objects of the first milk commission are described and the origin and meaning of "certified milk" are set forth. The word "certified" has been registered in the U. S. Patent Office and may only be used by a duly organized medical milk commission.

The first milk commission was organized in 1893. Since that time over 60 commissions have been established but nearly one-third of that number are inactive at present. About 125 dairies are engaged in producing certified milk and the daily production is nearly 25,000 gallons, an increase of 300 per cent in five years. While this seems a remarkable increase, it should be remembered that only about one-half of 1 per cent of the total milk supply of the country is certified. While the chief demand for certified milk is for infants and sick people, it further serves to teach the public the value of careful methods in milk production and the extra cost of absolutely clean milk.

The bulletin describes the equipment and methods necessary for the production of certified milk. It is pointed out that expensive equipment is not a necessity so much as a careful and unremitting attention to details.

In 1907 the American Association of American Milk Commissions was organized. The methods and standards for the production and distribution of certified milk adopted by this association at its 1912 meeting are given in the appendix to the bulletin.

A Loan Library for Educators.

The Pennsylvania State Board of Education has in process of organization a library on education for the use and benefit of teachers, superintendents and citizens of the state who wish to keep in touch with the latest and best thought on topics relating to modern educational movements, but who do not have immediate or convenient access to books or pamphlets touching these subjects.

Teachers, superintendents and other school officers, lawyers, physicians, ministers, members of women's clubs and other civic and professional or lay organizations are frequently called upon to prepare addresses or papers for public, civic and educational meetings, and are at a loss to know where to get authoritative matter to serve their purposes. Most private libraries to which

access may be had are limited to books of a general character, or represent only the owner's tastes and interests; public libraries are often inaccessible, and in many cases have little to offer on special subjects relating to the schools.

To meet the apparent need of this wide circle of special educational interests, this library has been created. It is the purpose of the state board of education to make the largest and best collection of books, pamphlets, clippings and reference lists on general and special phases of education that it is possible to secure. Every form of practical school endeavor will be represented in the list of books and pamphlets. The following headings are suggestive:

The health of school children; the physical environment; school-house architecture; school sanitation and its relation to the pupils; household and manual arts; vocational, industrial and manual training; vocational guidance; school administration; moral education; school gardens; social center activities; education of defectives; agricultural education; playground activities; consolidation of schools; eugenics.

The Psychological Clinic

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MEASURING EFFICIENCY OF INSTRUCTION.

BY WILLIAM E. GRADY,

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If the ethical problem of education is to promote such an organization of society as will enable each individual to do the work for which he is best fitted, the essential requirements are not only a diversified curriculum to insure accurate adjustment of the process to individual needs and capacities, but also the development of standards and scales of measurement such as will enable us to measure the success of the instruction process in terms of the individual. While it is probably impossible at this time to outline a specific method for measuring the effectiveness of our work, it is not difficult to indicate several important factors, many of them at present ignored, which are fundamental to the establishment of any such standards.

Assuming in spite of the present confusion of ideals, that we had a definitely formulated aim which could stand the test of scientific criticism, and which would be not only broad enough to be true to the splendid variety of human nature, but also specific enough to make it a proper measure of the intensive and vital individuality of each pupil, it would still be difficult if not impossible at present to measure the effectiveness of the educational process, because we do not measure in terms of physical endowment and native mental capacity the pupils for whom such an aim must be realized.

For example, at present pupils entering the first year classes are grouped and instructed on the assumption that because they have reached the chronological age of six years, they must be alike as regards mental maturity despite the wide variations in nationality, physical and mental endowments, and specialized environmental experiences. Within the last few years we have witnessed partial attempts to insure homogeneity of the pupil groups under instruction by the elimination of the blind, the deaf, the tubercular, and the

mentally deficient. The day should speedily come when all children on admission to school will be subjected to a thorough examination, inclusive not only of the child's learning but also of his physical condition and native mental ability.

Inasmuch as there are well-established norms of stature, weight, thoracic and cranial capacity, acuity of vision and hearing, we ought to know at the initial stage of the pupil's school career in what respects he is subnormal, normal or super-normal in order that such knowledge may be the fundamental basis of pedagogical endeavor. "Biometry and bio-statistics lift the child out of a general class and present him to the teacher's eyes as a living individual."

Great as is the need of sizing up our incoming pupil in physical terms, still greater is the need of testing his mental capacity upon his admission to school. The assumption that as regards mentality children are all the same or all about alike finds no basis in fact. As soon as we apply tests of native ability, whether they be those of Binet and Simon, or the more eclectic scales that are being developed rapidly, we discover an astounding variation in native ability, a fact which must receive explicit recognition in any attempt to measure the effectiveness of our work. You cannot garner souls from the four corners of the earth without reaping a few of the supremely talented of god-like vision, a bulk of mediocrity, constituting what one writer calls "the ballast of civilization," and lastly a harvest of thorns and thistles, of moral, mental and physical debris.

An application of the Binet scale to the children in the schools of Vineland, New Jersey, showed that of 1547 so-called average pupils, 616 were from one to six years retarded, 582 were normal, and 349 were from one to four years better than normal. Can it be doubted that if our first year group were subjected to testing, a corresponding variation in ability would appear?

Without amplifying the discussion it may be sufficient to state that until we recognize the problem of individuality, and at the very outset of our work determine the physical and mental equipment of each pupil, we are in no position to measure with any degree of accuracy the work expended in bringing the pupil group up to a given standard, much less decide whether the teacher, the pupil, the method, or the curriculum is the cause of our failure to reach desired results. However, it is apparent that the evaluation of work costing $40,000,000 a year can hardly be postponed until such educational aims have been formulated and until pupils have been scientifically classified. Modes of valuation, the establishment of standards and scales of measurement are a present need. It is interesting therefore to refer briefly to two recent attempts to measure the effectiveness of the teaching in our city schools

In his recent attempt to pass judgment upon the quality of instruction in the schools of our city, Professor McMurry consciously rejected the customary modes of judging the efficiency of instruction in terms of examinations of pupils in subject matter. He claims that under average conditions, tests or examination are of little positive value as sole standards for judging efficiency for several reasons. In the *first place* such testing depends too much upon accidental conditions such as recency of review, freedom from embarrassment or excitement. In the *second place*, such tests tend to over-emphasize the value of a retentive memory and a fund of information rather than reasoning ability and correct methods of study. In the *third place*, certain higher effects of instruction as distinguished from the mere accumulation of information or habits of study cannot be measured by the average tests. Finally such tests do little beyond revealing the present status, and standards for judging the effectiveness of instruction should be so chosen as to suggest the direction that further progress might take.

Rejecting therefore the customary mode of testing as a means of determining the effectiveness of the instruction process, he assumes as a fundamental thesis that a curriculum is good to the extent to which it contains problems mental, moral, æsthetic, and economic that are socially vital and yet within the pupil's appreciation, and that the method of presenting the curriculum is good to the extent to which the method exemplifies ways of solving problems found most effective by the world's intelligent workers.

Because of their universality, Professor McMurry states that the following four factors were considered worthy of acceptance as standards for judging the efficiency of instruction:—

1. *Motive:*

Inasmuch as a man's aims or motives in terms of their quality, their variety and their intensity determine his character, one of the primary responsibilities of instruction is to develop motives, to lead the pupil to want, to know, to do, and to be. Instruction cannot rest satisfied with cold facts alone. Its quality is to be measured partly in terms of its provision for growth in motive.

2. *Initiative:*

In the world at large, perhaps the most highly valued quality of character is the power of initiative, the ability to act as a leader not only in one's own affairs but in the affairs of others. Children can act largely under the influence of a dominating personality called the teacher, but in the last analysis they must be self directing. It follows therefore that the school should consciously aim to direct the

power of self direction. To the extent to which the instruction process requires that as children progress through the grades, they bear increasingly the responsibility for decision as to the origination and the execution of work, just to that extent is the work characterized by initiative.

3. *Judgment or consideration of values:*

Inasmuch as life's situations constantly thrust considerations of worth to the foreground of both adult and pupil experience, school instruction should consciously aim to develop the same critical attitude that life's situations demand. In other words, effective instruction should result in the development of sound judgment. There should be fewer recitations in history, geography, literature or any other subject, in which the varying values of facts and tasks are not distinguished.

4. *Organization of thought:*

Inasmuch as a factor of special importance in daily life is the organization of ideas, a fundamental aim of instruction should be so to group and relate the material presented that the pupil will be possessed of definite, conceptual systems of thought which will be the basis of ample, organized expression.

No intelligent critic of the teaching process can deny the superlative value of these descriptive, subjective standards as partial measures of the efficiency of instruction and as a strong reminder of the defects of the traditional mode of testing by means of examinations that tend to put a premium on memoriter instruction. But does not the fact that the application of such criteria led Professor McMurry to conclude that the working theory of our schools seemed to be directed systematically away from such standards, indicate the need of supplementing them in every way possible? Inasmuch as definite, concrete expression of knowledge such as the best type of the traditional tests demand, is also a very real index of the effectiveness of instruction, we still face the question: What means shall we adopt to stimulate motive, to spur initiative, to test judgment and to measure organization of thought?

The use of the Courtis tests in arithmetic illustrates a very recent and interesting attempt to solve this problem. The application of the test was an attempt to supplement such subjective standards as Professor McMurry proposes, by definite objective scales of measurement which enable one to judge the extent of the pupil's accomplishment and the effectiveness of the teacher's work. On the basis of tests covering 10,000 pupils in seventy schools in ten different states, Prof. Courtis has devised eight arithmetical tests involving:

1. Copying of numbers during a time span of one minute.

2, 3, 4, 5. Combinations in addition, subtraction, multiplication and division during periods of one minute each.

6. Computations involving the four fundamental operations during a period of twelve minutes.

7, 8. Problem groups in one of which operations are merely indicated; in the other of which the work is carried to completion during spans of six minutes each.

Extending his investigations to 52 schools, 913 classes and 33,000 pupils, he concluded that the application of these uniform tests to all grades revealed the following:

(*a*) That grade grouping as an index of arithmetical attainment has very little significance.

(*b*) That there is great variation in the abilities of the pupils in any given grade. He concludes that testing 4B grades as at present organized will reveal the following,—

45 per cent of the grade will exceed the average of the grade.
35 per cent of the grade will exceed the average of the next higher (grade 5A).
25 per cent of the grade will exceed the average of grade 5B.
15 per cent of the grade will exceed the average of grade 6A.
10 per cent of the grade will exceed the average of grade 6B.
5 per cent of the grade will exceed the average of grade 7A.

In like manner

35 per cent of the grade will fall below the 4A average.
25 per cent of the grade will fall below the 3B average.
15 per cent of the grade will fall below the 3A average.
10 per cent of the grade will fall below the 2B average.
5 per cent of the grade will fall below the 2A average.

(*c*) That accuracy has been sacrificed for speed.

(*d*) That the proficiency obtained in abstract work which is as high or higher than that ordinarily obtained, has been obtained at the expense of reasoning ability.

The vital importance of Mr. Courtis' work lies in the fact that on the basis of extended investigation, he has developed a certain measuring scale of proficiency that is applicable not only to individual pupils but also to a school or to a system. Despite the fact that such standards are tentative, that the problems employed and the conclusions drawn with reference to reasoning ability should be subjected to critical analysis, the fact remains that were such standards generally adopted they would undoubtedly do much to place arithmetical instruction on a sounder basis. The supervisor, the

teacher, and the pupil would work more intelligently and more effectively if such terms as rapidity and accuracy found in most courses of study, were reduced to the degree of definiteness indicated by the Courtis tests.

The following table with Mr. Courtis' interpretation will serve to indicate more clearly what is meant:

STANDARD SCORES.

Test No.	No. 1 Copying	No. 2 Addition	No. 3 Subtraction	No. 4 Mult. No. 5 Div.	No. 6 Compt. Ats.	No. 6 Compt. Rts.	No. 7 Problems no operat'n Ats.	No. 7 Problems no operat'n Rts.	No. 8 Problems operation Ats.	No. 8 Problems operation Rts.
Grade 3..	58	26	19	16	5.0	2.7	2.7	2.1	2.0	1.1
" 4..	72	34	25	23	7.0	3.3	3.7	3.0	2.6	1.7
" 5..	86	42	31	30	9.0	4.9	4.8	4.0	3.1	2.2
" 6..	99	50	38	37	11.0	6.6	5.8	5.0	3.7	2.8
" 7..	110	58	44	44	13.0	8.3	6.8	6.0	4.2	3.4
" 8..	117	63	49	49	14.4	10.0	7.8	7.0	4.8	4.0
" 9..	120	65	50	50	15.0	11.0	8.6	7.8	5.0	4.3
	(1 min.)	(1)	(1)	(1)	(12)		(6)		(6)	

"Translating this table into words: At the end of a year's work an eighth-grade child should be able to copy figures in pencil on paper at the rate of 117 figures per minute; to write answers to multiplication combinations at the rate of 49 answers per minute; to read simple one-step problems of approximately 30 words in length and decide upon the operation to be used in their solution at the rate of 8 examples a minute with an accuracy of 90 per cent; to work abstract examples of approximately 10 figures (twice as many for addition) at the rate of 14.4 examples in 10 minutes with an accuracy of 70 per cent; to solve two-step problems of approximately 10 figures at the rate of 5 in 6 minutes with an accuracy of 75 per cent. At the present time 70 per cent of the eighth-grade children cannot meet these standards. But it must be borne in mind that 3 per cent of the fifth-grade children can, and that experience has shown that individual care and a very little well-managed drill produces marked changes in the ability of most children."

To state that in a certain grade, in a minute's time so many addition combinations should be recognized with a certain degree of accuracy, or referring to another field of work which has been recently investigated, to say that as a result of penmanship instruction, so many letters should be written in a certain time with a certain degree of form and legibility, is to insure not only increased intelligent effort on part of the teacher, but also increased self-motived attainment on the part of the pupil.

Why should not our school system test the value of the qualitative and quantitative standards that have been developed as a result of recent investigations? If Ayres, Thorndike, Wilson, Freeman and Starch have worked out certain standards in penmanship, Hillegas and Courtis, standards in English composition, and Buckingham a scale of measurement in spelling, why should not the work receive cordial acceptance by our supervisory staff? To the extent that these results are valid we should make use of them; to the extent that they are defective we should reject them on the basis of carefully scrutinized classroom practice.

In short, we have reached a stage in educational practice where there is a definite realization of the need of defining standards of attainment in each school subject, and also the degree of proficiency to be attained at any stage of the effort. For example, it is recognized that we should know not only the amount of arithmetic or penmanship a pupil should be master of at the close of an eight year course, but also the amount and quality of his attainments at any given year during the course. Effective instruction is partially dependent upon the establishment and use of definite standards of attainment which will enable us to determine the amount of change our instruction has effected. The establishment of standards such as are contemplated, involves due consideration of the capacity of the pupil and also the demands of the life into which he will probably go. While the study of school conditions will tend to fix certain maximum standards to be attained in such subjects as the "three R's," due regard for each individual's native capacity and his prospective vocational life will determine the degree of proficiency that it may be desirable for him to attempt to attain. Moreover, such investigation as well as the application of the results is fundamentally the work of the administrators of our city schools, rather than the work of university professors or postgraduate students remote from contact with the teaching situation.

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A LITTLE MORE "TRUTH ABOUT TOBACCO."

By Charles Keen Taylor,

Philadelphia, Pa.

In January, 1913, *Harper's Weekly* published an article which made my "eyes like stars start from their spheres". This astonishing essay not only absolves tobacco from all wrongdoing, but even intimates that it might be beneficial. It warmly declares that the much abused weed has never been shown to have worked actual damage upon the average normal person, and that all lectures, statistics, text books of physiology, and the like to the contrary, are both absurd and ridiculous. In fact it decides that there is no "evidence to condemn tobacco in any form, not excepting cigarettes"!

I marvelled greatly how such an article came to be printed in a reputable journal, and my first explanation was silly. I thought there must be one of those interlocking directorships one hears so much about, between the tobacco trust and the publishers. Abandoning this idea, I then thought that the writer, a man financially interested in tobacco or an habitual smoker, smuggled the article into the magazine when the editor was not looking. This idea was discarded as more silly than the first. Finally I arrived at the only sensible explanation. The man who wrote it thought he was doing his religious duty in destroying the damaging ideas extant concerning tobacco. He sincerely thought he was right, and in his mind's eye no doubt beheld thousands of young men and boys arising to call him blessed. So he wrote with truth in his heart and sincerity as his goal. As for the editor, he evidently thought the article was presented as a piece of humor, a comic essay, and accepted it because it is funny.

But the fact is that the writer of the serio-comic essay in question seems to have had an unparalleled genius for making doubtful statements, so that instead of appearing to be merely funny, the contents of the article, in their possible effect, appear to be serious enough. Furthermore with the standing of *Harper's Weekly* behind it, the essay if unchallenged might help to make even harder the already sufficiently difficult struggle for a better moral, mental, and physical development of the young people of this country. For this reason the present writer feels that he should set forth such information concerning the effects of tobacco as he has found in his

statistical studies of children. It might be mentioned here that the author of the article in question, Dr. Leonard K. Hirshberg, scrupulously avoids mentioning any of the important statistical studies made along this line. Perhaps he never heard of them.

A very simple method of taking up this subject is that of considering the doctor's article, paragraph by paragraph, so that none of the absurdities and mistakes, due no doubt to pure ignorance of the subject, may be neglected. The first couple of paragraphs set forth the dictum that the great opposition to the using of tobacco is largely based upon a kind of puritanic dislike for anything that gives too much pleasure. Also, those who know no better object to it because "it gives its users contentment, peace, and a healthful, animal sort of enjoyment, a sublime callousness to the ethical and theological puzzles which fret and frazzle its enemies, a beautiful and irritating indifference to all but the pleasant things of life". This last by the way is a remarkable admission, though why our friend the doctor should consider a callous indifference to the finer things of life as a distinct advantage, I am really unable to imagine. It is very true that heavy smokers, especially juvenile smokers, are often callous and insensitive: that is one of the serious charges laid against the use of tobacco; but why the estimable doctor should advertise that effect of the weed as one to be desired I cannot imagine, unless it be that he too by dint of smoking, or perhaps chewing, or both, has made himself indifferent and callous, and thinks his second state better than his first. I doubt if an unnarcoticized public will agree with him.

Let us see what he says in the next paragraph. Here we have his word for it that the chief critics of the use of tobacco are the members of the Woman's Christian Temperance Union, patent medicine advertisements, and school physiologies. This is really too funny. It has the unconscious humor which is the very funniest kind. The sight of the ignoramus parading as the sage has tickled humanity ever since the dawn of civilization. As a matter of fact, any one who knows anything at all about the question knows that the most consistent and determined opponents of smoking are the school teachers of the country, and the physical directors and athletic coaches as well. From a direct acquaintance with hundreds of children and young people they are likely to know what they are talking about. The writer for some years was a regular teacher, and since then, while carrying on special investigations of different kinds among schools and pupils, he has become acquainted with many hundreds of children, and yet in all that time he has never seen a "Temperance Union" tract on the smoking question, and extremely few patent medicine advertisements on the subject. As for the school

physiologies, it is very probable that the doctor is not aware that the majority in use have been prepared by very able men of his own profession, men whose names are not at all unknown either to the medical world or to the general public. Besides teachers and those directly engaged in the endeavor to improve the physical status of children, there are very many students of childhood and of character development. If the doctor, by way of curiosity, should care to inquire of these, he would doubtless gain much valuable and startling information. Just one good example will suffice, taken from a book well known to those interested in the physical development of children and young men,—"Anthropometry and Physical Examination," by J. W. Seaver, A.M., M.D. On page 184 of this volume we read as follows:

"It has long been recognized by the ablest medical authorities that the use of tobacco is injurious to the respiratory tract, but the extent of its influence in checking growth in this and in other direction has, I believe, been widely underestimated." Then Dr. Seaver cites the results of some very simple observations made at Yale and Amherst. Studying the "growth" of a class at Yale it was found that the weight of non-users increased 10.4 per cent more than that of the regular users of tobacco. In growth of height the non-users grew 24 per cent more than did the regular users, and in lung capacity the non-users increased 77.5 per cent more than did the users! Dr. Leonard K. Hirshberg with commendable discretion gives no statistics. Dr. Seaver does so, with interesting results, as you see. The class of '91 at Amherst was studied in the same way, with very similar results. So here we have an example of a critic of a type not mentioned by Dr. Hirshberg,—a type of critic to be reckoned with. To make assurance doubly sure before passing on to the next exhibit, let us consider a few figures obtained by Dr. Pack of the University of Utah.* Dr. Pack received figures from the physical directors of six colleges. In these colleges there were 210 candidates for positions on the first foot-ball elevens. Of these candidates 117 were non-smokers. One third of the smokers and two thirds of the non-smokers made the teams. The lung capacity of the smokers averaged 30 cubic inches less than that of the non-smokers. Also, considering scholarship, the average mark of the smokers was 74.5 and of the non-smokers 79.5. Besides this, the smokers scored twice as many failures as the non-smokers. Further criticism of this particular paragraph of Dr. Hirshberg's is unnecessary.

What says the learned doctor next? Says he, "Practically all of the world's gigantic store of anti-tobacco literature is based upon four fundamental propositions:

* Quoted, not verbatim, from *The Continent*, January 2, 1913.

"1. Tobacco contains nicotine, which is a powerful narcotic and poison.

"2. In the process of smoking, nicotine is absorbed into the body and produces or induces many deadly maladies, including cancer, paralysis, heart disease, bronchitis, blindness, and tuberculosis.

"3. Tobacco engenders a craving for alcohol.

"4. Nicotine is such a powerful poison (this is a classical argument and appears in all the school physiology books) that one drop placed upon the tongue of a dog is sufficient to kill the animal."

The doctor now genially admits that nicotine is in fact a decided narcotic and poison, but he claims, the drug enters the body in such small quantities that "the body so soon grows immune to its effects, that it does no harm whatever"! As to the smallness of the entering quantity, first of all, infinitesimal as it is, it is yet powerful enough to produce very painful and characteristic disorders. Repetition, in truth, as the doctor says, eliminates the appearance of disorder, and this the doctor claims, proves that the body has become "immune". And now, along the same line, comes another argument which must have been the one which made the editor decide the article was a humorous one, and consent to publish it. The doctor goes on to show that people who have once had yellow fever, or small pox, become immune to those diseases. Then says he, "it is the same with nicotine poisoning"! The man who has gone through the mild poisoning that attacks beginners is thereafter immune to all ill effects of tobacco! That a physician, a real "M.D.", will say that the poisoning produced by a drug produces an immunity for itself just as a disease produced by bacilli produces immunity for itself, makes one pause and wonder where that physician could have obtained his M.D., or what kind of "callousness and indifference" would permit him to write such a thing. It sounds well, of course, but drugs and poisons do not all act in the same way. Alcoholic poisoning is a beautiful example of the group of habit-forming drugs. No matter how a man is poisoned—no matter how drunken he is upon his first close acquaintance with alcohol, he is hardly less affected the next time, and the next time. In fact he can readily be poisoned to the end of his days, which are not likely to be many. Also, by taking small doses of opium, one does not seem to become immune. In fact, as in alcohol poisoning, and also in nicotine poisoning, the presence of the drug in the system seems to set up a craving for more of the drug, often with serious results. However there is no need to pursue this particular line further. The figures given by Dr. Seaver and by Dr. Pack show that the regular taking of nicotine, even in very small quantities, does not make the taker "immune" at all, but causes serious and perhaps permanent effects.

The doctor now has one entire column devoted to the argument that after all the smoker, even the cigarette smoker, really obtains but a very small amount of nicotine, a fraction indeed of the amount of the drug which existed in the smoked cigars, cigarettes, and pipes. The cigarette too, let us say in passing, is absolved of all blame, the user receiving no worse effects than could be obtained by smoking kindling-wood, hay, or dried leaves. This last of course is absurd, but we have no quarrel with the first part of this statement. The smoker does in fact receive very little of the amount of nicotine existing in his cigar or cigarette, but that little, as our statistics seem to show, has some effect after all, and one not to be left unconsidered.

Next the doctor lights upon the saying that tobacco-using may bring on cancer, catarrh, bronchitis, blindness, and the like. But who on earth ever says that smoking is responsible for the occurrence of any affection really caused by bacilli? As to cancer and blindness however, our medical expert is rightly cautious, for too many smokers have developed cancer on the lips, tongue, or in the throat, and too many have had eye troubles directly attributable to nicotine poisoning to give a disclaimer much weight. So he dubiously admits that in certain cases, far remote from ordinary, such things may happen as cancer or eye-trouble as a result of too great an indulgence in tobacco, but only in the case of very abnormal people. Even if nicotine can encourage such effects in only a few the argument is clear enough that it does have *some* effect. But we will let that go for the time being, while we see what comes next. I wish we could go over the entire article in complete detail, but space is wanting.

Next he declares that tobacco-heart has nothing whatever to do with tobacco. He endeavors to show that Dr. Osler agrees with this, but with poor success, though the effort from a standpoint of ingenuity is first class. Then he quotes from Osler, as a "clincher", "cardiac pain without evidence of arteriosclerosis or valvular disease is not of much moment." Well this is true enough, for ordinary cardiac pain, as anyone who knows anything about the heart will tell you, is no evidence that anything is the matter with the heart itself. But I wonder if the enthusiastic doctor ever heard of a sphygmograph, or of a plethysmograph, and if he ever obtained pulse-records of numbers of smokers and non-smokers with the aid of these ingenious instruments. Many such records have been made by me and I have seen the trembling finger of the instrument, moving lightly over the blackened paper, mark the characteristic little irregularities that appear in the pulse of the habitual smoker. There is no cardiac *pain* at all. Says Dr. Kenelm Winslow, formerly Assistant Professor of Comparative Therapeutics at Harvard University, "In true

organic disease of the heart muscle, when the action is unusually strong and rapid, the patient is, in most instances, completely unconscious of it". So one may have a cardiac trouble without pain in the heart. And so one may have tobacco-heart without pain, too. There is no question of pain at all. But that the regular use of nicotine does cause the introduction of an irregularity into the pulse is easily demonstrated, and anything that will cause an irregularity in something as important as the pulse, must be a matter of serious consequence indeed.

Unfortunately we cannot stop at every sentence, and pick out the very visible flaws, but we will have to consider one or two more remarks before closing. Says the doctor, many have "pointed out the indubitable fact that the average boy smoker is not so bright as the boy who does not smoke." Then he goes on to say that only stupid boys smoke any way, boys who are stupid from birth and who will remain stupid through life. I should like to ask, if it is not an indiscretion, whether the doctor smoked when *he* was a boy! Next he says that bright and healthy boys, if kept away from evil companions, will not smoke. He then says, if you do not believe it, ask any observant school-teacher. Well, for one, here is a former school-teacher writing this present article, a teacher who has incidentally made physical measurements and individual study of many hundreds of boys. This particular teacher does not believe any such thing as the learned doctor proposes. Why do boys smoke? Not because they are stupid from birth, not at all. Merely because they wish to imitate "grown-ups". In two things a boy can imitate a man—one kind of a man. A boy can be as profane and a boy can smoke as much, or almost as much. Then too, active boys like to be considered "sports", and are not generally shown the difference between "cheap sports" and "real sports". The cheap sport is usually in evidence; he is no athlete, he is usually a corner-lounger, and of course he smokes largely; also he is usually profane. So the boy wishing to be looked upon as older and more mature than he is, adopts the striking vices of this striking type of "sport", and so becomes a smoker. This has been not only my observation, but that of all close students of the question with whom I have become acquainted, one of whom I may mention, Dr. Arthur Holmes, late Assistant Professor of Psychology in the University of Pennsylvania and now Dean of the Faculty of State College. The boy,—the average boy and not the abnormal one,—smokes in imitation, and suffers serious consequences thereby.

In closing, I take the liberty of publishing, mostly for the first time, the results of some extended observations among school-children,

both of public and of private schools. Let us first consider records taken from 450 private school boys,* boys of what we are pleased to term the "upper middle class". Records were taken of boys of from twelve to seventeen years inclusive. It was found that 15 per cent of the twelve year old boys, 20 per cent of the thirteen year old, 38 per cent of the fourteen year old, 29 per cent of the fifteen year old, 57 per cent of the sixteen year old, and 71 per cent of the seventeen year old boys were either regular or occasional smokers. Does Dr. Hirshberg dare to claim that 71 per cent of the boys in these schools were *born stupid?* It is not likely. Now follow the grades for these boys, contrasting those of the non-smokers with those of the smokers. These grades were averaged from their school reports for three successive months, and included marks for lessons as well as for conduct.

Age	12	13	14	15	16	17
Grade, non-smokers	83	90	89	84	87	85
Grade, smokers	73	75	73	75	75	68

Even considering the fact that the smoker is likely to be an outdoor boy, and less of a natural student in consequence than the non-smoker, these figures are rather significant.

Let us now consider a group of 263 public school children, twelve years old and older, in grades from 5th B to 8th B inclusive.

These boys were pupils in a public school of a very fine type and high standing, and in a good neighborhood. The average age for each class was found, and then the boys who were older and younger than the average were studied, not only as to their smoking—that was merely incidental—but as to many other interesting data. But with regard to tobacco, this was found,—of the boys who were two years younger than the average for their class, 2.3 per cent were smokers, of those one year younger than the average, 10.5 per cent were smokers. Boys of the average age included 38 per cent smokers. Boys a year older than the average had 41.2 per cent of their number smokers, 81 per cent of those two years over the average were smokers, and 83.5 per cent of those three years over average. This is rather significant. But, you say, the older boys would naturally possess a higher percentage of smokers anyway. Well, let us consider all of the boys of one age in these grades. Taking all those of twelve years of age we find that in the highest grade there were no smokers of this age and none in the next lower grade, in the next 14 per cent

* *See also* Taylor, Charles Keen. The Boy and the Cigarette. THE PSYCHOLOGICAL CLINIC Vol. IV, p. 54.

of the twelve year old boys were smokers, in the next lower 16.7 per cent, in the next 20 per cent, and in the next 23 per cent. Although we cannot concede that these boys smoked because they were "born stupid", we can see plainly that the boys who are advanced for their age are not smokers, while those who are low for their age are so in considerable proportion.

A study was made of the "disease" records of these 262 boys. The total percentage of smokers was 30.4 per cent. Now if smoking had no effect, we would be likely to see the proportion of smokers having had "stomach trouble" to the non-smokers having had the same disorder to be the same as above, that is 30.4 per cent. Such, however, is anything but the case. The records show that of the boys having "nerve disorders", all, that is 100 per cent, were smokers. Of all having "stomach troubles" 71.4 per cent were smokers. Perhaps this was caused by swallowing smoke and nicotine-laden saliva. Of those having typhoid-pneumonia, 50 per cent were smokers, the same is true of appendicitis. Of all who had diphtheria, 38.5 per cent were smokers, and of those having disorders in the naso-pharynx 37 per cent were smokers. These percentages, you will note, are all larger than the legitimate proportion of 30.4 per cent as noted above. It is only when we consider the common diseases of early childhood, which come before the "smoking age", that we find the proportion the one that Dr. Hirshberg would expect, for it is exactly 30.4 per cent, as one would suppose.

It is hardly necessary to give the difference in growth rate of smokers and non-smokers among boys, for they are much like those of the college men, as noted by Dr. Seaver.

With all this evidence before us we cannot help coming back to our first question, and that is, how did such an article happen to be published in a careful and influential magazine? And we can arrive only at the same conclusion,—that the editor printed it as a bit of humor, and that the writer himself was so callous and indifferent to ethical considerations, that he really did not care what its effect might be upon his juvenile readers and upon the uninformed among his adult readers.

RETARDED SIXTH GRADE PUPILS.*

By Anna Johnson,

Whittier School (for Retarded Children), Denver, Colorado.

In speaking of these retarded children who have come under my supervision this year, I desire to say that, with the exception of two pupils, I consider them all normal, physically.

These two I have mentioned as exceptions have failed to reach the required minimum of efficiency which would have enabled them to continue in the regular grades, not because they are abnormal mentally, but because of illness that has kept them out of school; also they are both handicapped through defective hearing. All the others who have failed to stand the test of the course of study have done so for various reasons other than physical ones.

The reasons, so far as I can ascertain, are truancy, slow mental development, excessive cigarette smoking, lack of application to their school work, in some cases vicious dispositions which have made them difficult cases to discipline, and the moving about of the family from place to place. About one-fourth of them are retarded because of mental inability to grasp the main subjects prescribed in the school curriculum, although even they are bright along some lines. The other retarded ones are both physiologically and psychologically normal.

I have had this year an average number of twenty-three pupils belonging; an average daily attendance of about 96 per cent. The average age of these children on entering last September was fifteen years. The grade entered was the sixth grade June class. At the end of this school year one pupil will have completed three grades, three pupils two and one-half grades, five two grades, six one and one-half grades, and six one grade.

So far as mental activities go I have found the truant children very bright. They all have had a wide experience outside of school subjects, and they have proved themselves capable of assimilating their experiences and adjusting them to their studies, especially in geography, history, composition and reading.

Among the several cases of retardation that come under truancy and irregular attendance, I wish to state that there has been only one case of truancy in my room this year, and that was caused by discordant home conditions rather than any dislike for school on the

* A report to the Superintendent of Schools, Denver, Col., June, 1913.

part of the pupil. However he was absent only two days and has not repeated the act. These truant children have been the most regular in attendance, many of them scarcely missing a single day during the school year. They all come under the list of those that have completed more than one year's work.

There were a few special cases of truancy beginning with a pupil who finished the work of three grades. On entering school last September his age was 15 years and 6 months. This pupil had been under the discipline of the Juvenile Court for the past two years. On account of his truancy and the periodical migration of the family he had spent from six weeks to three months in school each year from the time he was eight years old, this being his age on entering the first grade. When he entered the Retarded School he came with a certificate for the February fourth grade. Through error in assignment he was placed in the sixth grade. When the error was discovered I had a talk with the boy about it, assuring him that he could do the work of the grade if he would come every day and do the very best he could. This he promised to do, and he kept his word. From the first day of school until the second week of February, when the family moved out into the country, he had been absent only three days, and those on account of illness. As far as discipline is concerned the boy seemed almost hopeless. He had the most vicious temper I have ever seen; he really was to be feared at times. He did not sit, stand, walk, or talk like any other pupil in the room, always assuming a defiant manner; and as for obedience, it was simply a negative quantity so far as he was concerned. However, he found no blind obedience exacted of him, no punishments planned for him; and he learned that fallibility was not considered a crime.

I soon discovered that this boy had the innate sagacity to respond to the joyous spontaneous expressions of the class; hence, in a short time he settled down to the right attitude toward his school work. I found that his truant wandering days had been profitably spent in accumulating knowledge, which he soon worked over into a very fine finished product for the school-room. He had more practical knowledge than any child I ever saw. He never read a lesson more than once, and could make the brightest recitation in the room. He was an omnivorous reader, and read every book I could find for him, besides reading extensively from the Public Library. The only thing he had to work hard for was his arithmetic. Sometimes he worked three hours a day on it. When he left for the country he was beginning eighth grade work. A few days ago I saw his mother who told me that he had passed the eighth grade county examination, and hoped to enter high school next fall.

In another case of professional truancy the boy has completely reformed. This boy had spent two years in every grade beginning with the third grade. He would stay out of school weeks at a time, and when in school would not apply himself to any single subject. When he entered the Retarded School in the sixth grade he could not have done creditable work in a regular fourth grade. He did not seem to have a liking for anything in the line of school activities. He had never read a book in his life outside of the school reader; it was positively painful to listen to his reading. While reading a variety of stories to the children, I found that he would listen most attentively to myths, therefore I seized the opportunity and supplied him with that class of literature until he had mastered the mechanical ability to read and incidentally acquired a love for it. The result was that by December he was reading one book a week from the school library. He now reads well and it is a pleasure to listen to him. All his other subjects have improved in proportion. At the end of the year he will have finished the work of one and one-half grades. Best of all, he has developed into a strong, trustworthy, self-reliant boy. During the whole year he has been absent three days, and those on account of illness.

There has also been marked improvement towards reform in two cases of excessive cigarette smoking. These two boys at the beginning of the year smoked from five to fifteen cigarettes a day. They insisted upon leaving the room two and three times during the morning session, and this I found was for the purpose of smoking. After assuring them that there was no punishment in store for them, and that I would not tell, they told me what they were doing, also showed me their supply of cigarettes. They gradually stopped their smoking within the vicinity of the school. If there is any smoking done now by these boys it is done before and after school; but I have every reason to believe that very little of it is done, judging from their changed physical appearance. In the fall when they entered school they were two nervous anemic-looking boys, with a faculty for nothing but restlessness. Now they are a pair of healthy-looking youngsters who are not afraid to look you in the eye and tell you how they have cut down their cigarette ration. They are also good workers and have made great progress in their studies.

I wish to speak of two special cases in which too much discipline or the lack of discipline has been the chief cause of retardation. The first case is that of a boy whose age was sixteen years when he entered school last September. As near as I can find out he was about seven years old when he first went to school. He had been nine years reaching the sixth grade. All along the line he had been a source of

trouble, never adjusting himself to anything but mischief. His attendance at school has always been regular, his health perfect, and he is not mentally deficient. His whole being seemed full of negative elements; he seemed to glory in doing the thing one did not wish him to do. He had had so many punishments during his brief span of life that he had lost all sense of proportion as to right and wrong. After studying him for a few days I had a long talk with him. I told him that thenceforth he must take care of himself; that I did not intend to rebuke or condemn him, for he was to be responsible for his own conduct as well as for the conduct of the room. He gradually learned to control himself. He found that his feelings were always considered, hence he became sensitive to my wishes that he should do right. He has a great capacity for responding to kindness and loves to see people happy. I have found an infinite amount of goodness in this boy, and have myself learned many moral lessons from him. His best study is arithmetic. This study we boomed from the beginning and gradually worked the others in. At the end of the year he will have completed two grades. He is a great reader, and has done research work for his class, both in history and geography. His manual training has improved in proportion to his other school work. This boy has reached such a degree of self-control that I am sure he will fit into the many-sided activities of school and life.

The other case of difficult discipline is that of a boy who last year was under the supervision of the Juvenile Court for the simple reason that he would not behave in school. He had to report on his conduct every week. The only thing that kept him within the bounds of corrigibility was fear of the Detention Home and the Reform School. He seemed so destitute of fine feelings for one so young that he made a positively gruesome impression. The first month of school he did nothing so far as prescribed school work was concerned, but he did errands for me, helped me pass supplies, and assisted in keeping the school room clean. This gave him a great deal of pleasure and established confidential relations among all concerned. He was not asked to submit to any stringent rules. He had many directions given him, some corrections, but no punishments. I think he missed the punishments and moral lectures that he had been accustomed to, but when they were not forthcoming the only thing for him to do was to fall in line and join in the same activities with which the others of the class were occupied. This he did. He was tired of standing out as a distinct type, and while he has not made great strides intellectually he has developed a great deal of self-expression along the right lines.

From the time he first entered school until this year he had spent

two years in each grade, with the exception of the second grade. This year he will finish creditably one grade, and I am sure that the high degree of self-respect which he has attained will keep him from dropping back into his apparently outgrown habits.

In behalf of the other retarded children whom I have had in my room this year, I want to say that there has not been a single failure among them, either in scholarship or conduct. There has been a marked and strong improvement in all of them, especially along the lines of conduct, and after all that is one of the most available tests of education.

WHAT IS SANITY?

By Alice Groff,

Philadelphia, Pa.

Insanity is a word of very simple content as to its derivation, and means merely want of health. We apply it exclusively to the mind, and to a very special and extreme condition of mental ill health. But the truth is that insanity exists in all degrees, from inhibition by a "feeling-bias," which prevents the acceptance of a fact, to inability to distinguish between fact and a figment of the imagination. These minor degrees of insanity are not generally accepted as such, but the evolution of psychological science is bringing us more and more fully to the realization of the truth that such they really are.

Mind—or brain if you choose—may be conceived as an organ of the human body whose chief function it is to reason. What does it mean to reason? To reason is to make a comparison of the resemblances and differences among all the available facts bearing upon the subject under consideration, and to adjust these resemblances and differences into a judgment which may be experimentally and practically applied to life; always holding the mind plastic, however, for the admission of any new fact which may be revealed by science, and for the consequent necessity of a new comparison, a new adjustment, a new judgment, all following upon the admission of the new fact. Reason is a living thing, a growing thing, an evolving thing,—in a word, reason is a function of life, and the mind capable of it is a perfectly sane mind.

Logic is not reason, though to the untrained mind they may appear to be the same thing. Logic and reason are farther apart than the poles, as science is demonstrating to us more fully every day. Reason is the living thing, a function of life, while logic is the dead thing mechanically constructed from it. Reason starts with an impartial consideration of all the available facts. Logic sets out with a premise, defining a fixed point of aim, and proceeds to manufacture a chain of evidence, keeping the fixed point always in view and ignoring any fact which would divert the mind from the end aimed at. Thus logic shows itself to be an artificial thing, a manufactured thing, a thing without life and incapable of the processes of life. The stupidest mind can use logic when it has learned

its parrot lesson of the way to construct a path to any fixed end: a machine could be invented to use logic. Very few minds on the contrary can reason, because very few minds can grasp a large number of facts; very few minds are free from "feeling-bias" in making the comparison of resemblances and differences among facts; very few minds are capable of a judgment which is a perfect adjustment of these resemblances and differences on a large scale.

It would seem that the power to reason supremely well, either actual or potential, is the indubitable characteristic of the completely sane mind, and that the mind which cannot reason freely is insane in the degree of this inability. Such a mind may have but one point of insuperable "feeling-bias," one prejudice, one *idée fixe*, which inhibits the freedom of its reasoning processes, or it may have many; and these inhibitions may cover the ground all the way from inability to accept a new scientifically demonstrated fact, to inability to distinguish between fact and a figment of the imagination.

Such a mind is insane, therefore, to the extent of the number and degree of intensity of these inhibitions. There are minds of a low order of intelligence, because of ignorance of the higher scientific facts of life,—minds of what is called the "common-sense type,"—which have not had the education and varied experience that give broad knowledge, but which nevertheless are perfectly sane minds. They are minds which reason freely within the range of the facts they possess, minds which are always plastic to the admission of new facts that may come within their ken. There are on the other hand minds of almost cosmic intelligence, which are unable to reason freely because of an insuperable "feeling-bias," or prejudice, utterly unable to coordinate fully in any reasoning processes the enormous number of facts they have knowledge of,—minds which are insane to the degree and intensity of this inability.

Max Stirner's mind was one which might be called cosmically insane. His "feeling-bias" in favor of his own ego inhibited any coordination with all the other facts of life. Herbert Spencer is an example of a mind starting mature life with a wonderful reasoning power among an enormous number of facts, a mind which however permitted "feeling-bias" to control it to such an extent that free reasoning processes became greatly inhibited in his later years.

Nietzsche with a marvellous genius of imagination was always more or less insane, the insanity which finally drove him altogether out of himself being simply a multiplication and intensification of the "feeling-biases" which inhibited his reasoning faculty, to the point of ultimately destroying his ability to distinguish between a fact and a figment of his own imagination. Tolstoi also, in spite

of wonderful imaginative powers and marvellous intellectual versatility, was insane in the sense that he was unable to reason freely. His reasoning processes were enormously inhibited by his "feeling-bias" in the direction of the doctrine of non-resistance.

Great thinkers, that is to say, great originators of new ideas, are often very defective reasoners. This is why genius is so often allied to insanity. Great scientific discoverers are often wretched interpreters of the relational value to life and even of the synthetic value to science, of their own discoveries; and this would seem to be owing not to their specialized greatness, but to the fact that they had not had set before them, from the dawn of intelligence as an object of the highest aspiration in life, the ideal of free reasoning, the determination to allow nothing to inhibit the living function of mind.

Our first duty in education then would seem to be to train the growing mind into the ability to reason freely, to ward youth off the rock of the *idée fixe* or "feeling-bias" or prejudice, which might inhibit reasoning processes. I would not be understood as repudiating logic in such an education as a method of training, any more than any other form of mathematics. We must needs use logic in presenting any one subject, if for no better reason than to fix the psychological center of attention for the time being, until all the available facts bearing upon the subject are covered by the mind. But logic, as we have seen, is not reason. An insane mind may be brilliantly logical along lines which do not conflict with its inhibitions, while a completely sane mind may be unable to use logic because of ignorance of facts pertaining to the subject under consideration.

It will thus be seen that the possession of supreme reasoning power indicates a certain quality of mind which may be called sanity; while the power to use logic may or may not be a faculty of a mind whether sane or insane, this power depending upon a certain kind of training.

Modern neurological science calls insanity "conflict," meaning by this that the mind in attempting to exercise its natural faculty of reasoning, brings the freely coordinating ideas into conflict with whatever invincibly inhibiting "feeling-bias" or prejudice the mind may possess. Out of this theory there has been developed a neurological or psychiatrical therapeutic called the Freudian method, after Dr. Sigmund Freud of Berlin, Germany, who originated it. This method is based upon the observation that if the individual in whose mind there exists this sort of conflict, can be brought to a consciousness and an acknowledgment of the inhibiting "feeling-

bias" or prejudice, he can be cured in the sense of having his mind restored to free reasoning processes upon this one point at least. As the mind entertaining this "feeling-bias" is nearly or quite unconscious of it, this therapeutic is obliged to use the hypnoidal treatment in order to bring out into consciousness and hence to the possibility of recognition and acknowledgment, this inhibitive element.

The Freudian method should receive due welcome and support as a powerful remedial agency for the physically normal mind infected with inhibitions; but much more confidently should we depend upon an infinitely more efficacious preventive agency,—the education of the young child in a way which will prevent the planting of any inhibition to the perfect freedom of the reasoning processes, and which will thus do away, in the physically normal mind at least, with insanity in all its forms.

REVIEWS AND CRITICISM.

Your Child Today and Tomorrow. By Sidonie Matzner Gruenberg. Phila.: J. B. Lippincott Company, 1913. Pp. 234. Illus.

Mrs. Gruenberg does not assume to have made any original contributions to our knowledge of children. "In my efforts," she says, "to learn something about the nature of the child, as a member of child-study groups, and in my own studies, I have found a large mass of material—accumulated by investigators into the psychology and biology of childhood—which could be of great practical use to all concerned with the bringing up of children. In this little book I have tried to present some of this material in a form that will make it available for those who lack the time, or the special training, or the opportunity to work it out for themselves." And with this motive she has achieved an eminent success. Her book is fluent, clear, and engaging, like the conversation of well bred people. It holds the attention, but never grips or fatigues it.

One could wish that Mrs. Gruenberg had included, perhaps in an appendix, an account of this "large mass of material" which she has consulted. Some of her readers will hardly be satisfied with her echo, however pleasing, of the masters of child study to whom she alludes. Only once does she give references, and that is in chapter XII, "The Stork or the Truth," where she mentions more than twenty books and pamphlets dealing with sex knowledge for the child. It may with reason be objected that here is a situation in which books can be of the least use, and in which every parent has to think out his own way and choose his own time for conveying such information.

In chapter I Mrs. Gruenberg urges the need of child study. "Our instincts cannot be relied upon," she says, "when it comes to understanding the child's mind, the meaning of his various activities, and how best to guide his mental and moral development. . . . Each child is different from every other child in the whole world . . . the experts do not know *your* child; they have studied the problems of childhood, and their results you can use in learning to know your child. Your problem is always an individual problem." And the particular problem which interests her is the development of personality, the flowering of instincts, and their grouping to form a well-balanced character. Of the physical care of the child she has little to say, and still less about education in any of its formal aspects.

When she considers the subject of punishment in chapter II, Mrs. Gruenberg ventures upon rather insecure ground. "Never punish in anger," she says, and "we must allow every trace of anger to disappear." Here we may remind her that children are no less individual than she made them out to be in the preceding chapter, and that there are youngsters upon whom the blaze of justifiable wrath has a most salutary effect. And pray why shouldn't children learn in due season that human actions may be looked at in more than one way, and that what is amusing enough from their side of the question, may be expected to incur the anger of grown-ups with all manner of uncomfortable consequences? It is part of their initiation into the perplexities of life.

A very delightfully written chapter is devoted to the child's imagination,

and another to "The Lies Children Tell." It is characteristic of Mrs. Gruenberg's method that she dutifully accepts the conclusions of the leaders in child study, and hands them on to us uncritically. Later in the volume, when discussing "Children's Ideals and Ambitions," she misses an opportunity to make a criticism of value. She observes, "An interesting point that has been brought out by studies is the fact that degrading ideals are practically wanting in children." In her chapter on lies she has admitted, "with some children lying is caused by their æsthetic instincts. It is much easier for them to describe a situation as they feel it should be, than to describe it as it actually was." Yet Mrs. Gruenberg, following in the footsteps of many a trained psychologist, accepts as literally true the account which children give of their ideals! Here it is that grown-ups are so much more *naïf* than the youngsters. In the first place it must be remembered that it is generally easier for a child to lie in response to a direct question which concerns anything as subjective as his ideals,—anything which cannot be proved or disproved by appealing to facts. In the second place, even if it were not as easy as it is, he would still be under temptation to give the answer most acceptable to the questioner (or *least* acceptable, if he were in perverse mood). As an instance,—one little girl who has been intimately known to the reviewer, cherished the ambition to become a ballet dancer. Yet when asked what she intended to be, she invariably said "a trained nurse," and reaped the sympathy and approbation of her elders, who would have frowned upon dancing as the embodiment of all that is sinful.

It is in her stories of children's sayings and doings that Mrs. Gruenberg shines. There are not too many of them; they are fresh and chosen with the utmost discretion and taste. The same thing may be said of the pictures. Like the stories, they show real youngsters in natural and unforced episodes, and contribute much to the pleasure the book cannot help giving to everyone who cares about children.

A. T.

NEWS AND COMMENT.

London has a Clinical Psychologist for the Schools.

The Education Committee of the London County Council, at a meeting held June 26, 1912, appointed a psychologist to examine all pupils who are nominated by teachers of the regular grades, for admission to special schools. The school psychologist gives half his time to this work, and receives a salary of three hundred pounds per annum, about $1450. As the appointment was made for three years, the term contemplated has still two years to run, and there is reason to expect that the work will be extended and renewed for an indefinitely longer period.

Special Classes in Philadelphia Reorganized and Renamed.

In response to a questionnaire sent to the superintendents of 883 large towns and cities of the United States last summer, asking about progress in work for exceptional children, the following most interesting letter was received from Philadelphia:

". . . Little *new* provision in the way of additional classes and equipment was made during the year 1912–13. During that year, however, the

entire corps of special class teachers, principals having special classes, and district superintendents interested were organised in a committee which did effective work in the study of problems connected with these classes, and in the preparation of suggestive outlines of work, daily programs, etc. This material will be mimeographed and tried out in the class room with the idea of printing it later with the modifications suggested by experience.

"You will be especially interested, I think, to learn that as a result of the consideration of the classification of the children of the so-called 'disciplinary' and 'backward' classes, a somewhat different scheme of grading and nomenclature than that heretofore used has been worked out. So many of the pupils of the disciplinary classes were found to be very backward, or even mentally deficient, and so many of the backward classes were of the mixed type, that the distinction did not seem useful enough to retain it. It seemed better to lay the emphasis entirely upon the ways and means of securing the better development of the pupil; using the term you use in THE PSYCHOLOGICAL CLINIC, the classes may be designated as 'orthogenic,' this term superseding the terms 'backward' and 'disciplinary' heretofore employed. It has the advantage of characterising the classes by the aim or method rather than by terms more or less opprobriously descriptive of the children themselves. The same practice can be applied to other types of special classes; for example, 'orthopedic' for crippled children 'open window' for under-nourished and anemic children, 'open air' for those with active tuberculosis who must be by law segregated in separate buildings.

"It has been customary heretofore to designate the grade of the children as nearly as possible in the special classes in rough accordance with the grading in the regular classes, the special class under such a plan having perhaps several of the eight elementary grades represented in its enrolment. This is so inaccurate and has so many other obvious disadvantages, that it seems better to employ a simpler grading, as follows:

" 'A' designating pupils of low mentality held in special classes pending proper institutional provision;

" 'B' designating pupils of a grade of mentality above the institutional type, but not to be regarded as candidates for return to regular classes;

" 'C' designating retarded pupils of higher mentality who ought to be restored, if possible, to regular grades; also pupils able mentally to do work of the regular grades, but who by reason of moral deficiency cannot be permitted to attend them, these pupils to remain in special classes until better provision can be made for them.

"It is believed that these classifications will encourage the teacher to approach the problem from other points of view than that of the regular class room, and assist her in escaping from some of the distinctions, ideals, and traditions of regular class work, which do not properly apply to the special class. . . .

"Very truly yours,
(Signed) "OLIVER P. CORNMAN,
"Associate Superintendent."

The Psychological Clinic

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CHILDREN WITH MENTAL DEFECTS DISTINGUISHED FROM MENTALLY DEFECTIVE CHILDREN.

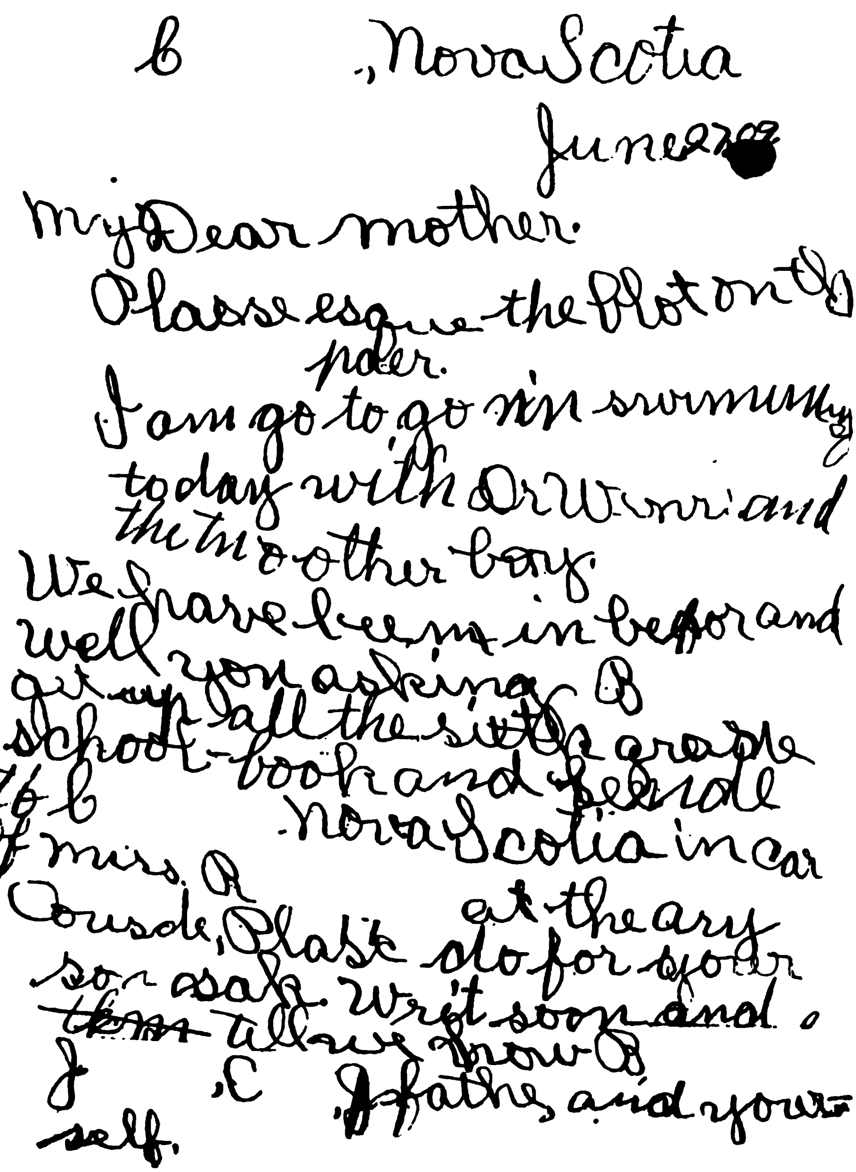
BY LIGHTNER WITMER, PH.D.,

University of Pennsylvania.

A few weeks ago I saw at a college preparatory school a boy eighteen years of age. This school has a four years course, of high school grade. The boy was in the second year of this course, excepting that he was not taking the prescribed foreign languages. He had done so poorly in Latin the year before, that the school authorities had decided it would be inexpedient to attempt to teach him a foreign language. When I asked the head of the educational department to rate the boy, he told me that he was by no means the worst boy in the school, and that every year they had boys of an inferior grade of mentality and scholarship. He could not assign his rank more closely than to say he was among the poorest 25 per cent.

This school is one of the best military academies and preparatory schools which I have ever visited, and has shown its progressive modern spirit by taking into its employ, this year, a trained man as consulting psychologist. The psychologist, who had already tested this boy and most of the other boys in the school, asserted that the closest rating he could give the boy was to place him among the worst 20 per cent.

I think we may therefore assume that this boy is a normal boy. In every other respect than in school progress, his behavior has always been that of a normal boy; and yet four years ago when this boy was first brought to me for examination, he could not read without many gross errors a single sentence in a child's first reader, such as is employed with children of the first school year. His errors, however, were of a kind which did not show deficient intelligence. He might read a sentence like "I saw the hen," as "I saw the duck." He might even read it, "I was the boy." Intelligent substitutions characterized much of his reading. Where such sub-



B ., Nova Scotia
June 2[illegible]
My Dear mother.
Plasse esque the Blot on the
paper.
I am go to go in swimming
today with Dr W[illegible] and
the two other boys.
We have been in befor and
well you asking B
all the sixth grade
school-book and [illegible]
to B Nova Scotia
of miss R in car
Cousde, Plase at the ary
son asaf. also for your
~~them~~ Writ soon and
tell us how
J C father and your
self.

FIG. 1

stitutions could not be made, owing to the words being somewhat more difficult, the word which he gave would often have not the slightest resemblance to the word on the printed page, or to any English word. Naturally he was unable to read for himself, for pleasure or profit. He liked being read to by the hour, and enjoyed books of history, etc., such as a boy of his age might be expected to choose for his own reading. During the previous year he had been in the fifth grade, *i.e.* the fifth school year. At fourteen he should have been in the eighth or at least the seventh school year. His school standing, therefore, showed two or three years of retardation. In fact he had not progressed in reading beyond the first school year, and at fourteen years was at the educational stage of many a child of seven. His spelling was as deficient as his reading. Figures 1 and 2 exhibit the character of his work. The first specimen is a portion of a letter written June 27, 1909, from Nova Scotia, where my summer school was located. He had entered the school June 1st, so that the specimen shows about what he was able to produce in the shape of a letter at the time of his admission to the school. As it is scarcely possible to make out his meaning without knowing what he intended to say, I give this portion of his letter as it should have been written.

"C———, Nova Scotia, June 27, '09.

"My Dear Mother:

"Please excuse the blot on the paper. I am going to go in swimming today with Dr. Witmer and the two other boys. We have been in before. And will you ask B——— to get together all the sixth grade school books and send to C———, Nova Scotia, in care of Miss R——— at the Larder Cottage. Please do for your son's sake. Write soon and tell me how B———, J———, C———, father and yourself are."

The second specimen was produced July 19th, after a month and a half of training. A number of sentences had been given him to study the day before. He was supposed to have learned the spelling of each word and the position of the words in the sentence. He was given the words at dictation, and also the sentences as units were dictated to him, each word and sentence being given once. One of these sentences was "We are going for nuts when they are ripe." What he actually put down on the paper is shown in figure 2 on the following page.

I frequently see children—but not usually so old as this boy—who are deficient in written work, the deficiency being due to inade-

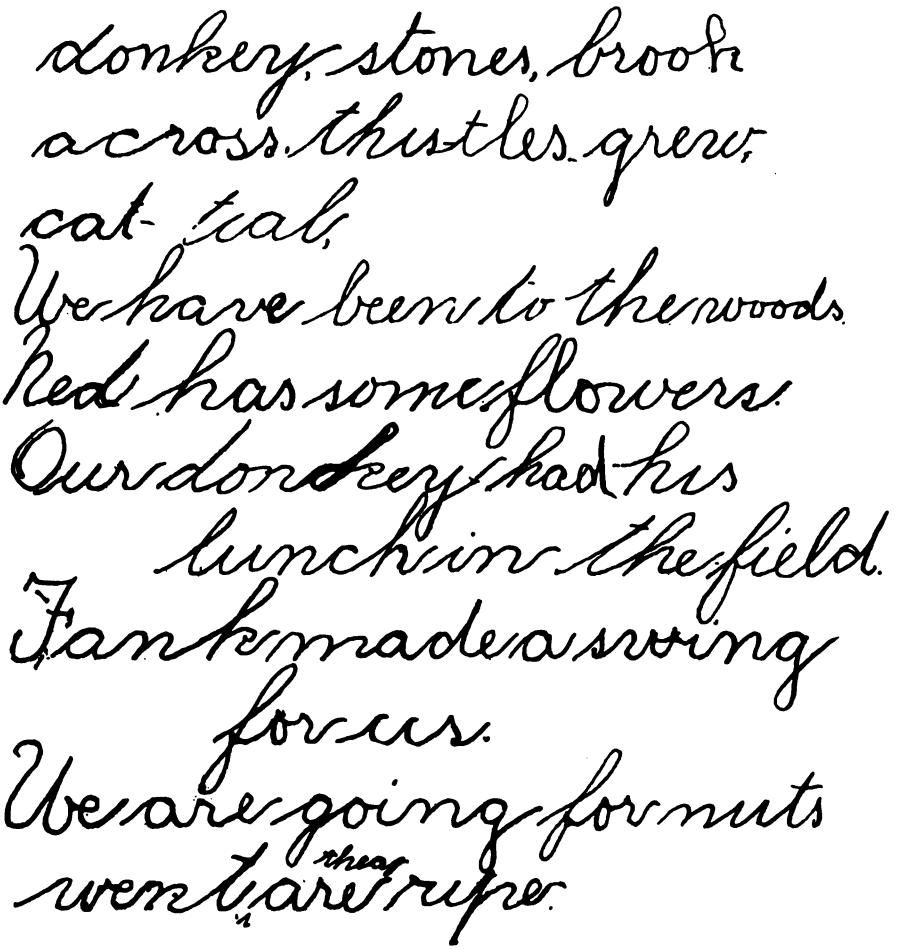


FIG. 2

quate school training. Careful examination showed that the deficiency in this case was due to a language defect, psychologically a defect of memory. The two parts or phases of memory were involved. There was both a weakness in retaining new impressions and a weakness in the recall of impressions which had been received and partially retained. The examination and history of this case clearly demonstrated that we had to do with a case of congenital amnesia, limited however to the language sphere, hence properly called congenital visual asphasia or word blindness.

Further examination revealed an equal amount of articulatory aphasia. It was oftentimes very difficult to understand what he said. I thought at first that coming from the South he was show-

ing the effects of imitating his negro caretakers, but in many respects his articulate language was worse than even a negro would employ. Moreover he was word deaf, as well as word blind, and as he had no definite trouble in the motor area, having satisfactory coordination for a boy of his age, and good muscular control, I would assume that the auditory aphasia or word deafness was primary and the articulatory aphasia a resultant.

In other words the case was one of a specific language defect, involving all three of the modes of language,—a general amnesia verbalis, or aphasia. This defect was not associated with any other mental or physical defect, excepting that the boy was somewhat small for his age, although not unusually small; that he had adenoids which were removed with considerable improvement to his health but no noticeable effect upon his language defect; and that he was somewhat lazy or languorous, but probably no more than we have a right to expect of a southern boy,—certainly no more than his older brother has shown, who has succeeded in getting into college. The boy undoubtedly has a neuropathic inheritance, which manifested itself in frequent migrainous headaches, but the tendency to these headaches was overcome through careful hygienic procedure during the two years and three months he remained in my professional care.

Our educational problem was exactly similar to that of teaching a boy to sing who happens to have no ear for music. There can be no doubt that there are many otherwise normal persons who are totally tone-deaf. This in technical terms is congenital amusia. It is a mental defect. There is a much larger number of persons who are partially tone-deaf. Fortunately this particular mental defect does not interfere with a successful career in life, excepting that the tone-deaf are necessarily excluded from a musical career. But were society so organized that success in life in every sphere of activity were dependent upon a good enough ear to turn a tune, many persons who are now doing useful work in the world would have to be relegated to the class of imbeciles.

Congenital aphasia is a more serious defect to the individual, because of its social and industrial importance, perhaps also because a certain measure of language development is essential for accurate thinking. I do not believe that a case of congenital aphasia can ever do intellectual work of a high order, but I do believe that congenital aphasics can have useful and successful careers and pass muster as entirely normal persons. Owing to the social and intellectual significance of language, it is important to teach a congenital aphasic to read and write, although it is not of importance to teach

a congenital amusic to sing. The latter procedure would be a waste of time and effort; the former procedure is necessary, especially if the child be otherwise intelligent enough to take his place as a fairly efficient adult in society.

Aphasia and amusia were first studied in the adult. They appear as the mental symptoms of a brain lesion, an injury to the local cerebral centres of language and music. Congenital aphasia and amusia, however, must not be supposed necessarily to be caused by a brain lesion, an injury to the child's brain in the early years of life, at birth, or during uterine life. While it is doubtless true that brain injuries may produce aphasia and amusia in children, and if such injuries occur during uterine life the condition may properly be described as congenital, nevertheless I believe we must consider that congenital aphasia and amusia do not rest upon a pathological condition of the brain, but are indicative of a tendency to biological variation, appearing in the affected children restrictedly as a variation of the functional activities of language and music. Congenital aphasia and amusia are to be explained in biological terms, in somewhat the same manner as we should undertake to explain left-handedness in about two per cent of the race.

I have given two examples of congenital mental defects,—congenital amusia and congenital aphasia, the latter serious so far as its consequences are concerned, the former a matter of indifference except as it may interfere with the happiness of the individual in expressing himself through music and song. There is another mental defect of this class, a congenital inability to acquire mathematics. This also is a defect of memory. I have not as yet been able to study individual cases as I have with aphasia. To prove that a child is congenitally defective in mathematics, expert training must be employed and the child must show himself unable to progress except moderately, despite this training. For example, the congenital aphasic with the consideration of whose mental condition I began this paper, was recently examined by me and found to be aphasic still. I was able to demonstrate some considerable reduction in word deafness, but the word blindness appears to be about the same as it was four and a half years ago. The very persevering and intensive methods of education have largely had the result of teaching the boy to read and write, to understand spoken language, and to articulate, despite the persistence of the mental defect. So far as social and intellectual importance is concerned, the mathematical memory stands in my opinion intermediate between the language and musical memories. I have not yet arrived at a fixed conviction as to whether it is of importance to

endeavor to train a child lacking mathematical ability in mathematical subjects. I am convinced, however, that the mathematical faculty is sufficiently lacking in many cases, to warrant exempting high school and college pupils from taking these subjects, certainly as they are at present taught.

These three defects are all of them defects of memory and involve one mental function only. There are varieties of mental defects very different from these, some of them of great interest and importance. I pass over such obvious mental defects as sensory and motor defects due to infantile paralysis or other causes, and proceed to a group of mental defects of great interest to the psychologist and educator, affecting those activities which the modern psychologist calls instincts or congenital traits. These are group activities. To designate them, certain names have been employed, such as the sex instinct, curiosity, imitation, obstinacy, vanity, jealousy, conscientiousness, appropriativeness, lying, sociability, shyness, and many others. It is part of our inheritance, it is human, to possess these instincts or congenital traits. We ought to assume that the typical child or adult is possessed of all of them in some degree. In the well-balanced individual, *i.e.* the normal mind, they probably all serve a valuable orthogenic purpose,—in other words they are mental assets. In other individuals, they represent mental defects, as in the child who lies, or steals, or in the adolescent who indulges himself in what is commonly called "immoral" conduct. Intrinsically, however, they are *not* mental defects, for it is human, it is normal, for the child of a certain age to lie and steal, and for the adolescent to feel, even to yield to, the promptings of desire. These instincts or traits are present in different individuals in different amounts. Where an instinct becomes excessive, we are in my opinion justified in considering it a defect. The problem of training the child is very often the problem of curbing excessive instincts. Moreover, in the course of individual development, the instincts diminish in intensity of action and are inhibited and controlled by the growth of an intellectual and moral will. Stealing and lying are always mental defects in an otherwise normal child of fourteen to sixteen years, but are not necessarily mental defects in a child of from six to ten years. The unscientific mind inclines to regard certain instincts as good and others as bad. The love of truth is as much an instinct as the love of lying. The love of truth we look upon as an asset, lying as a defect. As a matter of fact, both may be assets and both may be defects. An exaggerated love of truth, over-concientiousness, "the New England conscience," is a mental defect as much as is excessive lying. Lying

often is inspired by the instinct to tell a good story, and those who unduly and too early curb the child's imagination, even though it overflow at times into direct and palpable lies, may be helping to destroy a valuable asset of the child's consciousness, one which may later constitute the foundation for a literary or otherwise artistic career. I do not assert that all traits of character must be assets if present in due measure. I do say that we must be extremely careful how we evaluate the instincts. Imitation is an asset of the greatest value, but it is often excessive, especially in children, leading to extreme suggestibility and consequent emotional and intellectual instability. Vanity, which the child is usually asked to eradicate as a fault, is often a mental asset to the child. I have known many children to make their first and most pronounced step forward in consequence of a judicious appeal to their vanity.

If I have been able to make my meaning clear, it will be seen that I regard the child, for that matter the adult also, as composed of a number of traits, some of them assets if they favor normal mental development and success in adult life; some of them defects if they provoke retardation, arrested development, delinquency, and crime. There is no so-called normal person who does not possess some defects along with his assets. The type of child in whom I am especially interested and for whom I organized and am directing the work of the Psychological Clinic, is the child who possesses so many and such severe mental defects as seriously to interfere with normal development in the home and in the school, and to prognosticate his arrival at adult age arrested in mental and moral development. Because a child has one or a few mental defects, we must not characterize him as a mentally defective child, any more than we consider a child who has an eye defect, such as astigmatism and hyperopia, as physically defective. Of course he is not physically perfect, nor is any child physically perfect. By the same token, no child is mentally perfect. In fact, the child of perfect mind and body would be a rarer specimen,—shall I say a greater monstrosity?—than the idiot, the lunatic, or the criminal.

Undoubtedly there are children whom we can properly designate mentally defective children. The line can not be sharply drawn between children with mental defects and mentally defective children. The defective are those who have so many and such severe mental defects that they are unable to overcome these defects as a result of expert training, and must therefore reach adult age arrested in mental and moral development, industrially incapable of earning even a modest livelihood, and socially a menace often-

times to themselves and their families, and always to society, either by virtue of their own behavior or their retained capacity to reproduce their kind. The feebleminded child is a mentally defective child, but let us avoid supposing that he is feebleminded because he possesses "a mental defect." This terminology is a relic of an outworn and unanalytic psychology, which looked upon the mind as an undivided entity, a unit. It is unscientific to say that a child has a defective mind. We may say that he has a defective mentality, or that he has defective mental processes, or that he has a large number of mental defects. Where we shall draw the line between the child whom we shall call a normal child with mental defects, and a subnormal or feebleminded child who is mentally defective, is a problem which can not be solved wholly within the realm of psychology. No Binet-Simon tests, nor any other tests, will inform us as to what children we shall consider feebleminded. We define the feebleminded child as a result of social considerations. He is the child who for his own good and for the good of society should be segregated for life. After we have arrived at the social definition of feeblemindedness, we may employ our tests to inform us as to the mental status of a suspected case. A casual glance is all that is needed to assure us of the mental and physical status of some feebleminded children. But there will always be large numbers of children in the border zone between the socially normal child and the socially feebleminded child, and with such children the refinement of clinical methods and the application of intensive methods of observation and training will furnish us with psychological data which will enable us to arrive at a secure social classification. A strictly scientific nomenclature will dispense with the term "mentally defective," as failing to characterize with sufficient definiteness the class of children under consideration. What characterizes "mentally defective" children is not that they are mentally defective, for other children, in fact all children, are mentally defective, but that they are so defective mentally as to be socially unfit. For the term "mentally defective," I would therefore propose substituting the term "socially unfit," or "socially defective."

CLINICAL PSYCHOLOGY ADVERSELY CRITICIZED.

By R. H. Sylvester, Ph.D.

University of Iowa.

From visits to a number of clinics and other places where mental retardation or deficiency is receiving attention, from interviews with physicians and psychologists who are not working in the field, and from current journals and newspapers, criticisms have been gathered of clinical psychology in its present status. The adverse criticisms may be reduced to the following:—(1) Mental tests are being over-emphasized. (2) Clinical psychology is too much limited to diagnosis. (3) The work is not of much practical value, for little can be done to improve the mentality of the retarded and the defective. (4) Clinical psychology is usually based on the wrong kind of psychology. (5) The field should be cared for by the medical profession.

With very few exceptions, clinical psychologists must plead guilty to the charge of over-emphasizing mental tests. Much effort is being directed toward devising, refining, and standardizing testing devices with the apparent purpose of making them automatically measure intelligence in finely calibrated units. The futility of attempting this beyond certain limits is obvious when one remembers that psychology has not yet worked out all of the principles underlying the tests, and that standards of normal mentality are vague and indefinite. The Binet scale, the form board, and many of the tests adapted from the experimental laboratory are of great value in the clinic, but some of the effort spent in attempting to perfect and refine them is wasted. By giving more attention to the subjective study of children, examiners could reach a higher efficiency and make better diagnoses.

This over-emphasis on tests and mental measurements is due to reasons which may be enumerated as follows:—(*a*) Most psychologists have worked considerably in laboratory psychology, so they find in tests an adaptation of the methods and procedure in which they have been trained. (*b*) The inexperienced examiner has to depend on tests because he is not skilled in the interpretation of his direct observations of the child. (*c*) The experienced examiner can make the best use of assistants by having much of their work with his cases reported in terms of test results. (*d*) In case records, test

results are especially valuable, and for the comparison of individuals with the normal they are a necessity. (*e*) Because most tests yield quantitative results, they offer an attractive field for research. (*f*) People who bring children to be examined are best satisfied with diagnoses which are corroborated by the results of tests. (*g*) Educators, applied sociologists, and those of the general public who are interested, seem to expect the clinical psychologist to state his results in terms of tests and measurements. These are causes for the o er-emphasis of tests but certainly they do not fully justify it. Considering them in order, it must be said of the first that the examiner who relies on tests in the clinic as he would in laboratory experimentation evidently forgets that results from the latter are usually rounded out by introspection which cannot be secured from a child. As to the necessity for the inexperienced examiner's depending on tests, he must free himself from this dependence as quickly as possible, and he must take care that his interest does not become centered in the tests instead of in the child. To reasons (*c*) and (*d*), there can be no objections, for tests made by assistants economize the examiner's time and help him to understand the case, and at the same time they give quantitative material for permanent records and for comparison with normal standards. In regard to their claim upon research, tests are worthy of the most serious studies, provided the investigators set their goal beyond mere measurement and standardization. Certain parts of the field will undoubtedly have to be worked in a not too intensive way before research can get a proper grasp on the more fundamental problems of diagnosis. The expectation of parents and others that mental diagnosis be made by means of devices as exact as an acid test, in some cases justifies an attempt to express conclusions in terms of test results. But the examiner himself must constantly remember that most tests are functional tests, and as such they deal with complexes that are only partially analyzable. Physicians rely comparatively little on functional tests.[1] The nearest approach to testing functional capacity would be by means of an extensive and well balanced team of tests, but no scheme approximating completeness has been proposed.[2] However, the single tests and teams of tests which have been devised are of great value. The caution is against over-reliance upon them.

The second of the criticisms enumerated is that clinical psychologists fail to go beyond diagnosis. With this criticism is usually included the query, "Of what value would a physician's services

[1] *Jour. Am. Med. Assoc.* LIX : 451; *Am. Jour. Med. Sc.* CXLV : 330.

[2] Some of the best mental test teams are those of Binet and Simon, *L'Année Psychologique*, 1911 : 145; Thorndike, *Science*, XXXVII : 133; Abelson, *Brit. Jour. Psych.* IV : 268.

be if he merely diagnosed your case without treating it?" This usually comes from persons who have casually visited a clinic or read of the work. They have the notion that cases are merely examined and disposed of by an opinion expressed in the form of a diagnosis. In caring for either the physically or the mentally ill, the important thing of course is to know what is the matter with them. Treatment depends on diagnosis and often is the easier problem.

It is unfortunate that some psychologists do not concern themselves with treatment. An extreme instance recently came to my notice. A mother at considerable expense and effort took her child to a specialist in mental defects of children. He made a careful examination and gave his diagnosis, but when asked for advice as to what to do for the child he stated flatly that he did not allow himself to intrude into the field of therapeutics. It must be admitted that clinical psychology is in some ways back where medicine was about fifty years ago. The story is told of a Scotch physician of that time who after showing a visitor through his hospital said, "We diagnose, and diagnose, and diagnose." "And," inquired the visitor, "after that?" "We confirm our diagnosis." Every diagnosis is more or less a prognosis, and stating that a child is retarded because of physical condition or of faulty school management is telling what must be changed in order to remedy the defect. Most psychological clinics go as far into treatment as they can, giving suggestions and directions which are as truly perscriptions as are those which the physician gives to his patient to have filled by the druggist. The great majority of cases are requested to return for re-examination after the prescribed treatment has been applied, some of them reporting many times and continuing pedagogical and other treatment under direction for months. On October 1, 1912, 228 of the 482 cases handled by the Psychological Clinic of the University of Pennsylvania during the previous twelve months were still under observation. A few of them had been carried for more than a year. In addition the Clinic had in residence at schools from six to eight children who were being studied and taught. The report for the present year will show even more extended directing and following up of cases. Certainly this clinic is doing much more than diagnosis, and some others are working on the same plan. More therapeutics is desirable, but clinical psychology should be given credit for having done remarkably well in this direction considering the short time it has been in the field.

Another criticism from those not fully acquainted with what is being done, is that clinical psychology is neither practical nor necessary; that medical treatment does all that can be done for

retarded and defective children. For those who raise this point, the concept of retarded children includes only children who have adenoids, faulty vision, or other purely physical defect, and their notion of defectives includes only unimprovable imbeciles and idiots. They fail to recognize the great number of cases where there is some peculiarity which causes ordinary school methods to go awry or home and school training to fail, or where there is a remediable bad habit or learning attitude. After the case has been analyzed and the defect or peculiarity discovered, these children can often be restored to normal condition with surprising rapidity. Where the defect is an incurable one, its identification may make possible the building up of other capacities which render it less conspicuous. Even the cases sent to institutions for the feeble minded are not entirely hopeless. When the kind of work that Dr. Fernald is carrying on at Waverly becomes more general, the pessimistic attitude toward this field will be modified. Through his effective use of Seguin devices the children are introduced into industrial work and made efficient to a degree that one would believe them by no means capable of attaining. Progress will perhaps lead to specialized institutions such as the one which Berlin is to have for a psychopathic type of children.[3] Psychology and pedagogy have before them a work of much promise with these trainable defectives who are remediably retarded, and the work has already been well begun. Of the five criticisms discussed in this paper, the one on the impracticability of clinical psychology is the least valid.

Psychology as a science follows for the most part the rule of proceeding from the known to the unknown. In regular university courses emphasis is placed on the simpler mental processes with experimentation on those which are the most tangible, while study of the more complex and vague processes tends to go little beyond where it can be anchored to establish facts. The fourth of the criticisms against clinical psychology objects to its being so largely based on this kind of general psychology. Those who raise the objection do not approach the subject from the laboratory angle. One group takes its view-point from the psychology of Freud, Bleuler, and Jung which postulates a subconscious and attempts to build up a psychology largely from mental pathology. Another group does not accept Freud or the subconscious (subterranean psychology, as Dr. Lloyd, one of this latter group, has wittily dubbed it), but they believe that much of laboratory psychology is impractical and they choose to approach mental pathology directly, handling it in terms of its own manifestations. Dr. Burr has stated

[3] *Jour. Am. Med. Assoc.* LIX : 130.

it in rather radical terms, "I have not yet been convinced that the study of formal psychology throws any light on psychiatry."[4] A part of the present difficulty lies in the exaggerated notion of the differences among these view-points. Most examiners who follow the orthodox laboratory psychology do not believe in a subconscious, but in examining certain peculiar types of children they use methods of analysis involving much of the Freudian procedure. And they do not take time to drag in so much of formal psychology and laboratory procedure as is generally supposed. Likewise, the psycho-analysists would not presume to explain mere dulness and stupidity in terms of dissociations, repressions, and conflicts. The three view-points are not mutually exclusive in practical work at present, but most examiners confine themselves too narrowly to one of them. It is likely that the most serviceable psychology in the clinic is that which builds upon scientific facts experimentally demonstrable, and which also takes cognizance of the necessity of working in realms which laboratory procedure does not enter, and deriving all the help it can from Freudian and direct pathological methods. The examiner whose training has been largely in the experimental laboratory will do well to read some of the articles written from other view-points.

The last of the five objections holds that mental retardation and deficiency in children should be treated by the medical profession. At present few physicians are prepared for this work. Their medical school training has scarcely touched it,[5] and the field is of small extent as compared with their general practice of medicine. Obviously the work must be attended to by specialists, and the real question is as to whether the best specialist has given his major attention to medicine or to psychology. The opinion of many physicians is expressed in a recent article in which the employment of a consulting psychologist in a hospital for the insane calls forth the exclamation, "Could anything be more monstrous or preposterous?"[6] Is it any the less unthinkable for one who knows little of psychology to deal with mental deviation? Ignorance of the subject causes many physicians to minimize its difficulties. For instance a writer states with assurance that Binet tests are unnecessary because "feeblemindedness is so easily detected."

Of course the clinical psychologist who has not a medical education cannot work alone. He must work in cooperation with medical clinics which attend to the physical examinations and treatments. Whether the future specialist in mental retardation

[4] *Jour. Am. Med. Assoc.* LX : 1054.

[5] *Science*, XXXII : 664; *Boston Med. and Surg. Jour.* LVIII : 911; *Jour. Am. Med. Assoc.* LVIII : 909.

[6] *Jour. Am. Med. Assoc.* LX : 1058.

and deficiency in children must have completed courses in pedagogy, psychology, and medicine, or whether he can make himself more efficient by specializing in a limited field, is a question still to be decided. In general the medical profession is giving the psychologist every chance to prove his worth. Surgery and dentistry have come to be dignified professions. Even the reliable chiropodist is welcomed because he does a work which "medical practice has always assumed was beneath its dignity, so left to anybody and everybody."[7] Certainly the psychologist will in time be fully endorsed if he proves that he can be entrusted with duties for which the physician has not time adequately to prepare.

Were it within the scope of this paper, a list of favorable observations on clinical psychology could be given, which would be far more impressive than these five adverse criticisms. Suffice it to say that steady progress is being made both in the amount of work done and in its quality. Although psychological examination of school children has extended rapidly, the demand for it is more urgent than ever.[8] London has recently appointed a director of clinical psychology for the city schools. Psychological examinations in connection with juvenile courts are well established, and consulting psychologists seem to be rendering valuable service in hospitals for the insane. Another call for applied psychology comes from penal institutions. An Indiana reformatory has recently called from a university a professor of psychology, and other reformatories in the east have employed psychologists for some time. As yet we have only a vague notion as to how many criminals are mentally defective, and examiners will have to attain considerably higher skill before an estimate of the approximate number can be made. There is of late a general interest in the problem of the defectives who are mingling in society. An Australian physician observes, "A lot of our street loafers are defectives,"[9] and he urges that this dangerous element in society be not neglected. At the present moment there is an insistent call for better psychological examinations at immigrant stations. Those who are attempting to do the work are asking for better facilities and more help. Dr. Knox calls attention to the difficulties of detecting morons, and to the fact that examiners must have rather definite notions of the normal Italian, Greek, or Pole, in order to recognize the defectives.[10]

Dr. Knight mentions several difficulties, especially the shortness of the examinations and the confused state of mind in which one

[7] *Med. Times*, Jan., 1913, p. 22.
[8] *Archiv. of Pediatrics*, XXX : 197; *Jour. of Ed. Psych*, IV : 61.
[9] *Australian Med. Jour.*, Apr. 12, 1913, p. 995.
[10] *Jour. Am. Med. Assoc.* LIX : 105.

finds the immigrants.[11] Dr. Wilson shows still further how much a normal foreigner may differ from our ordinary concept of normality, and he shows the serious limitations of our tests.[12] Dr. Goddard's results from testing a few immigrants indicate the possibilities of the work.[13] Some of the medical journals have been carrying on propaganda through editorials against feebleminded immigrants. It is shown that a large percentage of the children in the special backward classes of the New York Public Schools are foreign born or of foreign parentage, and that the number of aliens who find their way into institutions for the neuropathic, the feebleminded, and the insane is very great. The New York Chamber of Commerce last year transmitted to Congress a resolution asking that taxpayers be protected against the importation of the feebleminded. These calls for applied psychology are of interest, because they have been evoked largely by the visible results of what has been accomplished through the application of psychology to retarded and defective children. There is convincing evidence that clinical psychology is worth while, and there is every assurance that the objections urged against it can be satisfactorily met.

[11] *Jour. Am. Med. Assoc.* LIX: 106.
[12] *Boston Med. Jour.* CLXVIII: 226.
[13] *The Training School Bulletin*, IX: 95.

SOME THINKING PROCESSES OF GRADE CHILDREN.*

By C. E. Benson, A.M.,

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In looking over the field of work done in experimental pedagogy and psychology of children, we are astonished at two things, first the recent date of the beginning of this kind of work: secondly, the scant amount of work attempted and accomplished, especially in experimental pedagogy. That the work is one of vast practical importance must be admitted. The notice given to experimental pedagogy by psychologists has been small, and by those engaged in the teaching of children, little if anything has been contributed.

The question of whether or not our public school system is educating for efficiency is receiving considerable attention at the present time. Does school training develop all the senses and possibilities of the child, or does it develop a few of the senses at the expense of the others? Another question, which is receiving and will continue to receive attention more and more, is whether school training helps the child to think independently, or whether it makes him mechanical and automatic in his mental efforts. Is common sense made an important factor in child development?

Whether we are educating for efficiency or not, is a question which experimental pedagogy must answer. Before we attempt to determine standards of performance in the different branches of our public school course, more attention must be given to tests of intelligence. There is a need for a set of standard tests for the children of our schools. At present the teachers have no way of telling whether their class is above or below the average. They have no standard by which to judge. We also need a standard whereby the individual may be judged and allowed to take the work needed to develop his weakest points as well as his strongest.

Throughout our school system we have children of approximately the same age in each of the first eight grades. What is the difference in the mental and physical development of these children, and wherein does the difference lie in their development and growth? Education is largely individual and since there are great individual

*Read before the Child Study Section of the Nebraska State Teachers' Association, November, 1912, at Omaha, Nebraska.

differences it becomes the business of investigators, first to find the chief points of difference, and secondly to suggest a possible remedy.

Retardation when judged by the age standard is taking into consideration but one side of the argument. Arrested mental and physical development is the factor in retardation worthy of the best efforts of the thinkers today. To develop the thinking and doing capacity of the children should be the chief work of the public school.

During the years 1910–12 it was my privilege to carry on two series of investigations, under the direction of Dr. H. K. Wolfe.* The first was by means of a questionnaire sent to a large number of rural schools and to the city teachers of Lincoln. This investigation was to ascertain, if possible, the difference between rural and city children of the seventh and eighth grades. The second investigation was to study some of the effects of school training on the development of children. It was recognized in both investigations that it would be impossible to investigate and perform experiments in all the various school subjects. Only a limited number of fields could be entered. Experiments and tests were made in sense training, judgments, and knowledge applied to the work of every-day life.

The investigations were undertaken to find, if possible, what our schools are doing in the field of education, rather than to give a solution of the problems.

Both investigations gave splendid illustrations of the thinking processes of grade children. In the first investigation age was not taken into consideration. In the second all were about the same age, an average of ten years and six months. In the first only the seventh and eighth grades were included, in the second all the grades from the first to the eighth inclusive were tested.

Time will not permit going into details regarding methods or material or the arrangements necessary to carry on the investigations with the best results. Everything was done to make the child as natural as possible. An equal number of boys and girls were tested.

The majority of the tests and experiments which will be given, were made in the psychological laboratories of the University of Nebraska. Throughout this series of experiments it must be kept in mind that the children were all approximately the same age. Up to the sixth grade they were all the same, and the average age of all the pupils was a fraction over ten years six months. Again the children came from all the first eight grades, and the test was the same for all. With these points clearly in mind no difficulty should be experienced in following the results of the experiments.

The psychological tests which were given were mostly those of

*Head Professor of Psycholoy, University of Nebraska.

judgment, including the weight-size experiment, time and space, middle of lines and visual apprehension. The pedagogical tests covered work in arithmetic, geography, reading and interpretation of pictures, tests of skill in drawing, and a physical test.

Some of the experiments and results may seem too simple and of no importance, but by a little reflection the psychological and pedagogical relations to mental development will be seen.

American children have been pronounced good guessers but poor thinkers, and to a large degree this is true. Exercises which will cause children to think outside of the regular systematic school work are not offered in many schools. The following simple exercise was given to test the children's judgment:—A small glass 60 mm. high with a base 40 mm. in diameter was filled with BB shot. The glass filled contained 219 shot. It was placed before the child and he was asked to estimate the number of shot in the glass. He was allowed to look all around the glass, but was not permitted to lift it.

In this experiment, a large majority of the first and second grades made a guess of one hundred. Those estimating the number at one hundred gradually decreased as we go up the scale of grades until we reach the eighth grade; here the girls are almost on a numerical equality with the girls of the second grade.

The lower grade pupils were quicker in their response than those of the upper grades. After the second grade the estimations vary and begin to differ with the individual. There is a marked sex difference in the upper grades. There is an almost constant increase in the pupils who estimated approximately the correct number throughout the grades. However, the proportion is very small who made such an estimate.

Less guessing and more thinking is evident as the grade advances. This does not mean, however, that many estimate it more nearly correctly, but rather the contrary. One hundred and seventy-nine out of two hundred and eighty made an estimate of one hundred or less,—less than half the actual number. It is evident that our schools do very little to develop this kind of thinking or judging.

School training should show a progress in accurate thinking for the majority as the grade advances, and this test indicates its failure to do so. More time could profitably be spent in similar kinds of sense training.

The motor side of education has been sadly neglected, and to test the accuracy of the muscle sense in its relation to intelligence the following experiments were made:—

A wooden disk 100 mm. thick, weighing 60 grams, and a series

of lead weights ranging from 1 to 660 grams, were used. The child was given the wooden disk and asked to select a lead weight (or a number of lead weights, if one could not be found that was satisfactory), equal in weight to the wooden disk. In all cases he held the wooden disk in the left hand and the lead weight in the right.

It would be interesting, if it were possible, to present a table of the individual results. The lower grades were more accurate in their judgments than the higher. The first grade ranks first and there is a gradual decrease through the grades, including the forty advanced university students, who performed the same experiments. In the first five grades the girls used better judgment than the boys. There is a gradual increase in the selection of lighter weights as we go up the scale of grades.

It seems almost beyond belief that only 43 out of 280 children selected a lead weight over 30 grams (one-half of the weight of the wood) and 237 selected a lead weight less than 30 grams as equal to 60 grams.

In this test sex differences are very marked in the upper grades. In the lower grades the illusion is not as great for the girls as in the higher grades. This is contrary to Wolfe* who found that with adults the illusion is greater for women than for men. For the eighth grade pupils and university students the results agree with Wolfe, while in the lower grades the results differ. It seems probable, therefore, that this illusion may have some direct relation to wider and more varied sense experiences.

To test the muscle sense still further the child was given a card-board box 12 x 12 x 14 inches weighing 1028 grams, and was asked, as with the wooden weight, to find a lead weight (or more than one lead weight) which was as heavy as the box. The same method was used here as with the wooden weight. The results are more interesting as well as more astonishing than those of the wooden weight. Sight is a universal sense and rules the judgment with a tremendous force. The largest lead weight selected by any one was equal to 660 grams. This was selected by two first grade pupils, two second grade, and one university student. Only five out of 320 persons selected a weight a little over one-half the real weight of the box. One hundred and eight selected a weight less than twenty-five grams as equal to 1028 grams.

The same statement holds true with the box as with the wooden weight, *i. e.* the lower the grade the heavier the lead weight selected. In this the boys used better judgment in their selection than the girls. Very little difference exists between the children of the

*H. K. Wolfe. "Some effects of Size on Judgment of Weights." *Psy. Rev.* V, 26.

upper grades and the university students. Another striking point is that many selected weights smaller than the same person selected for the wooden disk of 60 grams.

It can be plainly seen that size affects the judgment. To test this still further the following experiment was given:—

Five brass cylinders were placed before the child. One cylinder was one inch high. The other four were each five inches high. All were one inch in diameter. The small one weighed 170 grams, and one of the large ones was the same weight. The weight of the others were respectively 250 grams, 345 grams, and 507 grams. The child was told that one of the large cylinders was just as heavy as the small one and he was asked to find this one. He used only the right hand in lifting the cylinders. He first lifted the small cylinder and then lifted the large cylinders. He was permitted to lift the cylinders as often as he wished.

The results here are again astonishing. The conflict, as in the other two experiments, is between the sense of sight and the muscle sense, with victory for the eye. Again the same statement must be made, that the lower the grade the better the judgment. Seventy-four selected a cylinder of 507 grams as equal to a cylinder of 170 grams.

Only 12 out of 320 selected the correct cylinder. Four of these were in the first grade, two in the second, and two in the third with one in the fourth and fifth each, and two in the sixth. In the first six grades the girls excel the boys. In the first grade it was the girls who made the proper selection.

The question arises at once:—To what causes can we ascribe the increase of the illusion as intelligence advances? Has the school training developed the sense of sight at the expense of the muscle sense to such an extent that in the conflict the eye rules where muscle should govern? It would appear that common sense has also been sacrificed. Certainly common sense should be a factor in education. For example, one eighth grade student selected a lead weight of 10 grams as equal to a box of 1028 grams, and many selected a brass cylinder of 507 grams as equal to one of 170 grams.

That school training may be responsible for the lack of knowledge through the muscle sense is suggested by the fact that children who have never had school training often do far better than those who have attended school. Out of the realm of their peculiar thinking, children merely guess rather than think. The muscle sense is too important to be neglected. It is too useful in every-day life.

Time will not permit mentioning the other psychological tests made. Changing to the more strictly pedagogical the following were given.

Each child was given a piece of paper 4 x 6 inches and a pair of child's scissors. He was asked to cut out of this paper one square and two triangles and have no paper left over. This proved to be a very difficult task, beyond the ability of most children. Only 20 cut it correctly, and but seven out of the 280 children folded the paper first and then did the cutting. A very small percentage were able to cut the triangles. Most of them cut rectangles, showing that they were not familiar with the terms triangle and rectangle.

The first grade did better work than the second, third and fourth, and fully as well as the fifth grade. The sixth, seventh and eighth grades were nearly equal.

More boys cut the triangles than girls. Only 59 boys and 48 girls cut the triangles, or 107 out of 280 were able to perform this simple test. The conclusion is so clear that little need be said, except that the schools are not developing the skill or the thinking ability of children to solve a problem of this character. It proved to be outside of their realm of experience. Children should be allowed to handle, cut, and make these forms until they become a part of their usable and workable knowledge.

In the test of the triangles and the square, school training does not show to advantage. The success of the first grade pupils is undoubtedly due to kindergarten training, but the work with forms is neglected in the intermediate grades. The most noticeable point was the lack of knowledge of the shape of a triangle and the inability throughout all grades, to think clearly enough to fold the paper and cut it into the three required pieces.

It is always interesting to find out what children think about nature and the world about them. The following question was asked to find out the children's ideas about the size of the moon:—"How large do you think the moon is?" Exceedingly interesting answers were given. In the lower grades the moon is thought to be small, very much as it appears when viewed from the earth. As the grade advances the size increases until it has grown entirely out of proportion. It is surprising that so many who had studied geography considered the earth and moon to be the same size.

Very few children know approximately the size of the moon, and not a single one gave the correct answer. The large majority thought it was as big as the earth. Three answered that there was no moon, just a reflection of the sun.

It is evident that the moon is not receiving any marked consideration in the teaching of geography. It is a question which answer is entitled to more credit from the standpoint of intelligence, the one answering one foot in diameter, or the one saying that it is

as big as the sky, or millions of miles in diameter. More attention could profitably be given to this phase of geography.

No subject of our public school course is receiving as much attention as arithmetic. The results of this attention have not been as satisfactory as could be desired. It was thought advisable to test the children as to their knowledge of every-day problems. Several problems were selected, some of a practical nature, of common sense, and mental alertness. The problems were all oral. The children were allowed all the time they wished.

The following is one of the practical problems given: "If your mother should send you down town to buy two books, and they were each to cost 65 cents, and she sent $2.00 with you, how much change would you bring back?"

The first and second grades of course failed completely to work it, and for the third and even the fourth grade it proved too difficult. Only five out of the fifty pupils in the third grade worked it correctly, and eleven in the fourth grade. The fifth grade did better than the sixth, and the seventh better than the eighth. The boys excel the girls in handling this problem.

Another problem was given in the same manner as the first:—"If three men standing on top of the state capitol building and all looking south, can see six miles, how far can one of them see?"

A glance at results will show that the lack of application of common sense is evident throughout the grades. The first grade girls did as well as the sixth grade, and the second grade did better than the third, fourth, and fifth grades. Only 50 per cent of the sixth grade pupils, 75 per cent of the seventh, and 80 per cent of the eighth answered correctly. The girls did better than the boys. The large majority who failed to work it correctly gave as their answer, two miles. Their thinking was mechanical and followed routine book methods in solving it.

To show still further that common sense is not generally used by school children, the results of one of the problems given in the first investigation which was written not oral, will be interesting. This problem was given to seventh and eighth grade, rural and city pupils:—"My horse weights 1200 pounds when standing on four feet; how much will he weigh standing on three feet?"

Taking the results from the rural and city pupils separately we have interesting figures. Of the rural seventh grade boys, 71 per cent worked it correctly, and of the girls only 28 per cent, a total of 54 per cent for the grade.

In the city seventh grade we have 54 per cent boys and 10 per cent girls, a total for the grade of 35 per cent.

In the rural eighth grade, 86 per cent boys and 40 per cent

girls solved it, a total of 48 per cent for the grade. In the rural and city schools together for both grades, only 52 per cent worked it correctly.

The work in arithmetic shows a decided need for more emphasis on practical problems, problems which come within the experience of children in every-day life. The results indicate that when problems are given out of the usual text-book wording, children do not comprehend their meaning. That more attention should be given to problems of common sense is self-evident. There seems to be a great deal of unthinking and mechanical execution of mathematical processes without regard to the significance of the data, the operations, or the results.

Reading is the subject around which our entire course should center and in many respects reading is poorly taught. Throughout the entire investigation evidences of poor teaching in this subject could be seen. To get an insight into the interpretive ability of children, the following passage was read to each child:—"As the life boat returned from the wreck, the men on shore shouted themselves hoarse, the women laughed and cried."

This question was asked of each child: "What do you think has happened?" The answers were taken down verbatim and graded,—wrong, poor, fair, good, or excellent.

The interpretation proved too difficult for the first and second grades. As the grade progresses it becomes easier and many see the real meaning. School training shows to better advantage in this than in arithmetic, geography, history or morals. If more work of this nature could be done, more thinking on the part of children would result.

A physical test with the dynamometer was given to secure an index to the general bodily strength of the children, both right and left hands were tested and each hand was allowed three trials, the highest being recorded. It was found, as might be expected, that bodily strength and intelligence on the average increase with the grade for pupils of the same age. The results show very little difference in right and left handedness. With increased school training there is an increase in the hand grip.

In looking over the investigation as a whole the following conclusions were drawn:—

Throughout the entire investigation the results show that school training has not accomplished as much as would be expected. The individual is lost in the grade. It is the grade that advances rather than the individual.

Our present system of gradation is wrong. This is shown throughout the entire experiment. Many children in the first and second grades did fully as well as those several grades above them.

Geography work should go beyond the outline of the book and take in the physical universe as seen by the child outside of the school room.

Arithmetic is either poorly taught or else taught too much. More emphasis should be laid on practical and common sense problems. The chief aim of arithmetic should be to make children think, rather than to follow some mechanical rule or method laid down by the teacher or text book. The work in arithmetic is mechanical and not vital to the majority of children.

Throughout the school system the motor side is neglected. A recognition of its value seems to be lacking. The school trains in mechanical action instead of educating the child to think. The fear that a child will miss something by being promoted over a grade or two seems evident.

Many children are misjudged as to their native ability, a mistake which in individual cases may result in the most serious consequences. We need some measure of intelligence which will test the intellectual, volitional, motor, personal, social, and all other phases of human efficiency, and which will enable us to relate all these at every point to individual peculiarities of instincts and interests, and to all important accidents of experience.

We should have tests which will enable us to differentiate all degrees of intellectual ability, and all kinds of intellective unevenness. With tests of this kind in the hands of experienced, competent teachers, the individual child could be placed to his best advantage where he would develop his weak points as well as his strong ones. A system with the development of the individual child as its aim, would eliminate into special classes a large number of the so-called retarded children, who when given an opportunity to develop would do as well as many who are several grades ahead.

More work should be given to develop the thinking and doing ability of children. The school should develop all of the senses throughout the first eight grades. The individual, rather than the subject, should occupy the center of the field of action.

School training should develop the ability to think independently and to work with some degree of skill. Everything else is relative to intelligence, and because of this it becomes the chief business of the school to develop a high degree of intelligence. Tests of intelligence are necessary to ascertain the full extent and true nature of mental retardation or of acceleration. The individual child receives insufficient consideration. He is only a unit of a number. His real strength is left undeveloped, and only his average ability receives attention.

REVIEWS AND CRITICISM.

The Posture of School Children, with its home hygiene and new efficiency methods for school training. By Jessie H. Bancroft. New York: The Macmillan Company, 1913. Pp. xii+327.

Since "the posture of the spine, chest, and shoulders throughout the growing period influences profoundly their ultimate contours and proportions," the carriage of the body during school life, Miss Bancroft demonstrates, is an important factor in the efficiency as well as the beauty of the individual. For here as elsewhere, beauty and efficiency go hand in hand. Since the archaic beginnings of art, sculptors and painters have delighted in representing the erect, finely-poised, exultant human figure; but medicine has come very slowly to an understanding of the truth which has so long been axiomatic in art. It is only in the last decade, as Miss Bancroft points out, that physicians have undertaken to study the behavior of the internal organs under varying conditions of bodily attitude. Indeed it was as recently as 1909 that Dr. Joel E. Goldthwaite and Dr. Lloyd T. Brown published their paper, "The Relation of Posture to Human Efficiency and the Influence of Poise upon the Support and Function of the Viscera,"—a paper which Miss Bancroft pronounces "indispensable to the technical worker and adapted also to popular reading."

In discussing the posture of school children, Miss Bancroft has behind her an experience as assistant director of physical training in the public schools of New York City. and the authorship of two or three other books. She approaches her subject from every possible angle, and leaves no point untaken which could add to the strength and thoroughness of her treatment. There are no "loose ends" in her book. One cannot praise too warmly the masterly way in which she has organized her material, and the convincing clearness of her style. The illustrations are numerous and excellent, and the bibliography of 170 titles comes marvelously near perfection.

It would be unfair to disparage Miss Bancroft's splendid book by calling it optimistic, yet it raises a hope, a dream, and a vision. If the children of today should all acquire habits of erect posture, walking with heads up and feet straight forward, is it too much to expect, that thirty years hence we shall see but rarely upon American streets a middle-aged man or woman with sunken chest, pendulous abdomen, and flat feet? Some there will no doubt always be, victims of accident, or unusual hardship or a childhood spent under difficulties in a foreign country, but these unfortunates will be looked upon with the thoughtful pity which is the due of cripples. They will certainly not make up so large a proportion as they do now, of the people who once passed through the public schools.

A. T.

Helping School Children. By Elsa Denison. New York and London: Harper and Brothers, 1912. Pp. xxi+352. Illus.

It is not often that a book upon questions of social interest is still worth reviewing a year after publication. The more "timely" the work, the more quickly does it lose importance, as a general rule. Miss Denison's volume is the happy exception. After having been put to the tests which arise almost daily in an office like that of THE PSYCHOLOGICAL CLINIC, "Helping School Children" holds its own as the most useful of all references on the socialization of the schools. It is even probable that five years hence its value will be fully as great as now.

At first sight it is evident that "Helping School Children" is a discussion of the ways in which the schools are receiving outside aid. The further one reads on, however, the more one is struck with the sense that it is the children who are doing the helping, and it is their parents, neighbors, town officials, and cooperating organizations who are being helped to a fuller social consciousness, to a keener interest in good government and the common welfare. For wherever citizens have been stirred by their own impulses or by the tireless Bureau of Municipal Research to take an active part in helping the schools, there the children have more than repaid the community for efforts made in their behalf. The campaign for health in the schools, for example, has in some measure brought health to the family of every school child. The movement for beautifying school-grounds has extended to the cleaning up by children of back yards and vacant lots, until the aspect of whole cities has been changed for the better. The feeding of school children at the noon recess, and the teaching of cooking in the schools, has gone far to help mothers in preparing cheap, wholesome, and appetizing food. And perhaps best of all, the opening of schoolhouses in the evenings for informal gatherings of parents to see exhibitions of their children's work, has done more than anything else to promote neighborliness and a spirit of cooperation.

Just how these changes take place here, there, and out yonder, is shown by Miss Denison in explicit detail. She generously lets us into the secret, and tells us how she went about making her book, what inquiries she made, and how she followed them up. About the immense labor of sorting and compiling the collected material she is modestly silent. It would be vastly difficult to name anything which Miss Denison has left out which could have made her work of greater use, and it would be equally difficult within the limits of a brief review to give any idea of how much she has included. The index of topics alone covers six pages, of places mentioned four pages and of persons and organizations five pages.

A. T.

Experiments in Educational Psychology. By Daniel Starch, Ph.D. New York: The Macmillan Company, 1911. Pp. viii+183.

The preface confirms the suggestion contained in the title, that this book is "designed to serve as a guide for laboratory experiments in educational psychology," and Dr. Starch adds, "no previous training in experimental work is

necessary." To carry out all the experiments in this manual, keeping a note-book record of the results, would constitute in itself no mean training in method.

Chapter I introduces the question of individual differences in mental abilities, and four types of mental functions are selected for measurement,—memory, perception, controlled association, and arithmetical ability. Incidentally the student is shown how to tabulate his data and plot simple curves.

The subsequent chapters discuss visual tests and defects, auditory tests and defects, mental images, the trial and error method, the progress of learning, and the transference of learning, association, apperception, attention, memory, work and fatigue. In the chapter on trial and error, use is made of the very interesting experiment in which one traces with a pencil the outline of a six-pointed star which is seen only as reflected in a mirror. That sounds simple enough, but many surprises are in store for the unwary and overconfident experimenter. The errors are reckoned by counting every attempt to get back to the line which is being traced, and again the student is assisted in representing his results by means of a curve.

Many of these experiments in educational psychology can be recognized as friends of our youth, not greatly disguised by the academic dress they are wearing. Among them, the test which requires the crossing out of every *e* (or perhaps the filling in of every *o*) upon a certain page of printed matter, will be familiar to those who remember their childhood. So too will be the diverting occupation of making blots between two sheets of paper, and then guessing what they look like. It is evident, therefore, that besides being of service to the serious teacher and student of educational psychology for whom it was intended, Dr. Starch's book is capable of another and more frivolous adaptation. Many of his experiments would make capital "stunts" for whiling away a rainy day in the country or on shipboard. From this point of view they may be classed as scientific recreations, and yet lose none of their pedagogical importance by being found entertaining upon occasion.

In passing it may be remarked that the diagrams which illustrate the work are executed with something less than the perfection of draughtsmanship which one looks for in a book sponsored by the Macmillan Company.

NEWS AND COMMENT.

Diplomas in Psychological Medicine.

Four of the leading medical schools in Great Britain,—those connected with the universities of Edinburgh, Durham, Manchester, and Leeds,—have already made provision for granting diplomas in psychological medicine, and other universities are seriously considering the subject. "Psychological medicine," as the phrase is employed in English journals, seems to include what we know as clinical psychology, together with a good deal of psychiatry. Resident medical officers in English institutions for the feebleminded are being required to have had a training in psychology, and in making appointments of medical officers in insane asylums prefer ence is being given to candidates who have had a similar psychological training.

Department of Agriculture issues Warning against Non-scientific Diet Systems.

The U. S. Department of Agriculture has recently had called to its attention, by letters from people all over the country, serious misstatements as to the effects of foods or certain diets recommended by self-styled "experts in dietetics". As a result of these letters, the department specialists have secured the literature and recommendations of a number of these people and have made a careful study of the things they recommend as diets. The Department has issued the following statement covering this matter:

"In view of the wide spread of literature and advice of so-called 'diet experts,' it seems desirable to warn people against adopting the dietary recommendations of those without real scientific standing in the community. Some of the advocates of freak diets are sincere but are themselves deluded; while others are fakers, who seek to make monetary gain by advising peculiar systems of diet. Neither class can offer trustworthy advice. In most of the recommendations of these self-established 'experts,' there is hardly a shadow of reason, though they may seem plausible. One of their methods of reasoning is to use isolated and often unrelated facts of science as evidence that their peculiar system is of value. That is, they generally start out with a certain idea, and then strive to prove that they are right by seeking data which seem to establish their theory; but they completely ignore statements in current and historical scientific literature which would negative their contentions. In other words, they completely overlook or do not see the importance of discoveries by scientists which go counter to what they want to believe. It would be easy, following this same system of taking isolated facts away from their context, to produce just as much of the same kind of evidence that these 'food experts' are wrong as they adduce to prove that they are right. In neither case, however, would the method lead to real scientific conclusions.

"Many of these so-called diet systems lay great emphasis on raw foods. Now there is no objection to anyone's eating raw food if he likes it, or finds after experiment that it agrees with him, provided it is of good quality, free from contamination, and wholesome. The truth of the matter is, however, that man's chances of health are best when he eats with moderation a diet made up of clean, wholesome, ordinary foods, well prepared in the usual ways. Such a diet will include some articles to be cooked and others to be eaten raw, such as bread, cereals, fruits, vegetables, meat, fish, milk, butter, cheese, eggs, etc. These articles should be of good quality, free from dirt (visible and invisible) and adulteration, and well prepared.

"As a general proposition, raw food is not cleaner than cooked foods. Proper cooking sterilizes foods, and so renders innocuous pathogenic bacteria and other organisms possibly harmful. Raw foods have to be very carefully washed and cleaned before eating, and as a general rule simple washing, while it will get rid of most of the dirt, will not remove all the bacteria, insect eggs, spores of fungi, etc., that may adhere to them. If the systems of pseudo-reasoning followed by some of these diet experts were logical, it would be possible to draw the conclusion that no one should eat lettuce or other salads, or raw vegetables and fruits. This would not be warranted by science.

"In some of the literature circulated by the advocates of raw food, their

correspondents are urged not to eat animal foods because they say meat is filled with bacteria. This is not true. The surface of meat is not sterile, but the interior is, except in rare cases. We do not eat raw meat, except dried beef, or something similar, but cause it to be cooked, and this sterilizes it. In most cases where people have suffered, or think that they suffer, from eating meat or any other normal article of diet, the trouble lies not with the actual article but either in the imagination of the consumer or in the fact that the food has not been kept clean, or properly prepared and properly handled after it is cooked.

"In many cases, people on beginning a radically new diet, whether it has direct curative value or not, gain or think they gain a benefit. Any marked change in diet or cooking would produce the same effect, because change itself is often a benefit. The man or woman undertakes the new diet feeling convinced that it will help some real or fancied ailment, and expects results so strongly that imagination supplies them. Some of the cases so benefited are simply transient forms of digestive disturbances. Most of these feelings of discomfort quickly pass by themselves, if we do not dwell upon them and worry about them; but if the person tries a new diet, he is very apt to attribute all improvement to that diet, whether it has any direct bearing on the case or not. In cases of serious digestive disturbances, sufferers should consult a physician of known ability and known standing in their community. To submit such cases for treatment by mail is as foolish as it would be for a man having a complicated and highly specialized business trouble to ask someone who had never seen his factory, and knew nothing about the business except the data he could supply in answer to a set of questions, to supply him with a positive remedy at long-distance.

"Much of the advice on diet which has passed from individual to individual, and much of the supposed scientific advice now being sold for a price by some of the food advisers, is really little more than folk lore. A great many of the statements which are used as arguments by the experts for their diets have been traced by the Government specialists, and found to come from works on diet written so long ago as to be no longer considered of value except to the student of the history of dietetics, or else they have been separated from qualifying statements which would make the interpretation given them by the commercial users wholly unwarranted.

"These circulars of misinformation about diet find their prey principally among people who are always fancying that they have some complaint. If people remain in good physical condition year after year, and observe no marked change in weight, seem in good health and spirits, and are eating any simple and normal mixed diet, they have no need to worry about their food.

"People can expect to be lighter in weight in summer than in winter. As a person grows older he should begin to cut down the amount he eats, and depend on a less complex and simpler diet. It is often said that when a person passes forty, he begins to need a different diet. The reason given is that he does not exercise so energetically as he did, and consequently does not need the same amount and kind of food that was required to keep up his energy for more active physical work." In concluding their remarks upon food, the government dieticians offer the following sensible advice to the public:

"If you like raw food better than anything else, eat it. If you like bread

and milk twice a day, eat it. The main thing, as one grows older, is to eat in moderation and then, as always, to see that what you eat is clean and that the cooked food you eat is originally in good condition and that it is well cooked. If you eat raw vegetables and fruits and raw milk, take precautions to see that they are clean before they enter your system. If something really disagrees with you, and the fault lies actually with the article rather than with the method by which it has been kept or cooked, stop eating that kind of food. If you experience serious discomfort which persists, consult the best physician you can discover.

"Be wary of people who offer to give you advice or to cure you without ever seeing you. Finally, bear in mind that each human body has individual characteristics, and that a diet which admirably suits one man who lives in a certain location and does a certain kind of work may not be adapted to another individual living in a different climate and doing a different kind of work."

Fire Protection in Public Schools.

Americans spend one dollar per inhabitant per year in building new school houses, and let those school houses burn down at the rate of more than one for every school day in the year.

These facts were discovered some months ago by the Division of Education of the Russell Sage Foundation, and its officers promptly took up a study of fire protection in public schools. They found that the methods of such protection are comparatively cheap, simple, and easily applied. Any city which resolves that daily school attendance shall not mean daily danger of death, can readily put in motion measures which will make all its school buildings panic proof, all its new buildings fire proof, and all its old buildings fire retarding.

The whole matter is so important and its solution so simple, that the Foundation has published and is distributing at the nominal cost of ten cents, a pamphlet which tells in pictures and in terse sentences the magnitude of the danger with its appropriate remedy. A map shows that only two states, Ohio and Massachusetts, have good fire laws, fifteen have fair to poor fire laws, and in thirty-one states school children are absolutely unprotected by law from the risk of death by fire.

Directory of American Psychological Periodicals.

American Journal of Psychology—Worcester, Mass.: Florence Chandler. Subscription $5. 600 pages annually. Edited by G. Stanley Hall. Quarterly. General and experimental psychology. Founded 1887.

Pedagogical Seminary—Worcester, Mass.: Florence Chandler. Subscription $5. 575 pages annually. Edited by G. Stanley Hall. Quarterly. Pedagogy and educational psychology. Founded 1891.

Psychological Review—Princeton, N. J.: Psychological Review Company. Subscription (with Psychological Bulletin) $5. 480 pages annually. Bi-monthly. General. Founded 1894. Edited by John B. Watson.

Psychological Bulletin—Princeton, N. J.: Psychological Review Company. Subscription $2.75. 480 pages annually. Psychological literature. Monthly. Founded 1904. Edited by Arthur H. Pierce.

Psychological Monographs—Princeton, N. J.: Psychological Review Co. Subscription $4. 500 pp. per vol. Founded 1895. Ed. by James R. Angell. Published without fixed dates, each issue one or more researches.

Psychological Index—Princeton, N. J.: Psychological Review Company. Subscription $1. 200 pp. Founded 1895. Edited by Howard C. Warren. An annual bibliography of psychological literature.

Journal of Philosophy, Psychology and Scientific Methods—New York: Science Press. Bi-weekly. 728 pages per volume. Founded 1904. Subscription $3. Edited by F. J. E. Woodbridge and Wendell T. Bush.

Archives of Psychology—Substation 84 N. Y.: Archives of Psychology. Subscription $5. 600 pp. ann. Founded 1906. Ed. by R. S. Woodworth. Published without fixed dates, each number a single experimental study.

Journal of Abnormal Psychology—Boston: Richard G. Badger. Subscription $4. 480 pages annually. Edited by Morton Prince. Bi-monthly. Founded 1906. Entire field of abnormal psychology.

Psychological Clinic—Philadelphia: Psychological Clinic Press. Subscription $1.50. 280 pages annually. Edited by Lightner Witmer. Monthly (9 numbers). Orthogenics, psychology, hygiene. Founded 1907.

Training School Bulletin—Vineland, N. J.: The Training School. Subscription $1. 160 pages annually. Monthly (10 numbers). Founded 1908. Edited by H. H. Goddard. Abnormal child psychology.

Journal of Religious Psychology—Worcester, Mass.: Louis N. Wilson. Subscription $3. 480 pages annually. Quarterly. Founded 1904. Edited by G. Stanley Hall and Alexander F. Chamberlain.

Journal of Race Development—Worcester, Mass.: Louis N. Wilson. Subscription $2. 460 pages annually. Quarterly. Founded 1910. Edited by George H. Blakeslee and G. Stanley Hall.

Journal of Educational Psychology—Baltimore: Warwick & York. Subscription $2.50. 600 pages annually. Founded 1910. Monthly (10 numbers). Managing Editor, J. Carleton Bell. (Educational Psychology. Monographs. Edited by Guy M. Whipple. Published separately at varying prices. Same publishers.)

Journal of Animal Behavior—Cambridge, Mass: Emerson Hall. Subscription $3. 450 pages annually. Bi-monthly. Founded 1911. Edited by Robert M. Yerkes.

The Behavior Monographs—Cambridge, Mass: Emerson Hall. Subscription $3. 450 pages per volume. Edited by John B. Watson. Published without fixed dates, each number a single research.

The Psychological Clinic

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SHALL ELECTIVE COURSES BE ESTABLISHED IN THE SEVENTH AND EIGHTH GRADES OF THE ELEMENTARY SCHOOL?

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Table XLI of the Fourteenth Annual Report of the City Superintendent of Schools to the Board of Education of the City of New York presents the following figures:

REGISTER BEFORE PROMOTION, JUNE 30, 1912.

1A	40,489
1B	49,740
2A	40,327
2B	45,986
3A	40,336
3B	43,131
4A	39,568
4B	41,224
5A	37,329
5B	36,783
6A	33,237
6B	32,245
7A	28,875
7B	25,718
8A	22,250
8B	21,169
Total 1A–8B	578,407

In computing registers for the spring terms of the year, it has been found that the totals for B classes in the various grades are larger than those for the A classes. This is due to the fact that the admission into the 1A classes in September of each year is greater than that in February. The weather conditions are somewhat responsible

for this situation, parents being reluctant to have their children begin their attendance at school in the midst of winter. Furthermore, the old tradition that the year begins in September, is also a factor tending to make the 1A registers larger in the September term than in the February term. Thus the register in 1A before promotion, January 31, 1912, was 60,962 while that on June 30, 1912, as already noted, was 40,489. As a result of this, A registers are larger in the fall term and smaller in the spring term in all the grades.

Despite this fact, the 5B register is less than the 5A register for the spring term of 1912; and similar conditions obtain in the case of the 5th, 7th, and 8th years. In addition, it should be noted that the 6A register is 7252 less than the 1A register, while that of 8B is 12,068 less. It is fair to assume that of a given register in 6A classes at any specified time, about one-third will leave school without graduation.

There is nothing novel about this inference from the data. It cannot, however, too frequently be brought before the notice of those interested in the schools, that under the present forms of organization and administration, we are not able to hold children in the schools even to the end of the elementary course.

Economic stress cannot be cited as the cause of this great reduction. No one who has interviewed the boys and girls applying for an employment certificate, can fail to have become convinced that most of these children leave not because there is a real need for their going to work, but because the remaining years of the course do not offer features which bind them closely to school. It is not that work is necessary but rather that school is not attractive.

In order to determine why the course of study seems not to hold within itself the features that make the school a vital thing to the pupils, it is not necessary to take the subjects individually and show wherein they have become narrowed by reason of traditional influences still operative in our school system. It might, of course, be shown that the course in English history in the seventh year, by reason of the lack of preparedness of the teacher, the vast scope of the subject matter, and the immaturity of the pupils, can never be made to enter into the real thinking experience of the children. We might refer to the 7A review of the United States and the 8B general review in geography and point out that this constant re-presentation of old material is uninteresting. Or the 8A course in geography might be cited as a curious relic of the old interest in science as an academic subject.

In a similar way, the course in grammar could be analyzed so as to show wherein it demands a power of discrimination and logical thinking beyond the average child of the elementary school in

so cosmopolitan a city as ours. Again, the selection of masterpieces for literary study might be criticized on the ground that it does not properly provide for a vital point of contact between the emotional life of the pupils and the spirit of the selection.

All these criticisms have been made, and with authority. In fact earnest efforts are now being made to revise the various courses of study so as to rid them of the burdens of the centuries and make them adequately representative of the demands of our times. Our board of education and our superintendents have been at work at this problem for several years and notable reforms have already been accomplished. Others are promised for the immediate future.

But even if an ideal situation is created in each of the subjects, the fact will still remain that the course of study will be essentially academic. Book knowledge will still be emphasized. General culture, of the sort that one attributes to the well-read or well-informed man, will still be the distinguishing mark of the pupil who has mastered such courses. And the unfortunate fact will still confront us, so serious in its implications that its import is truly tragic, that the general fitness which we attempt to secure really means specific unfitness.

Take if you will the ordinary graduate of an elementary school. What is he fit for? Has he an equipment that will make him ready to take up with even a reasonable degree of efficiency any occupation other than that of a clerk or an office assistant whose work is unskilled? His manual training has been with wood as the only material and with no machines. Her sewing has been by hand or on a foot-driven sewing-machine. Entering any shop or factory, such a graduate is no better, save in general intelligence, than an absolutely untrained beginner. The seventh and eighth years of the course have given no preparation that would serve as a recompense for the extra time spent in the school. Why, then, should a pupil stay? The lure of the diploma, as a cachet of culture, is not strong enough to hold one-third of the pupils. That fact is attested by the figures in our possession. And as an offset to the diploma, there is the larger pay envelope of the pupil who left in the seventh year and in a year or so has become economically more valuable to his employer than is the inexperienced graduate.

Even this, however, serious as it is, does not give us a true picture of the gravity of the situation. The inflexibility of the course, essentially academic—a book-course—would seem to imply a homogeneity of interests in the pupils. There is no material offered on which a variety of tastes can be tested. We have no way of discovering aptitudes of pupils. Excellence in history and geography may be discovered. But what assurance have we that we are not neglect-

ing some extraordinary power in another direction? Eventually, such power must find expression. But the waste of tentative effort before a final form for activity is discovered is bound to be tremendous. Nor is it with extraordinary ability alone that we are concerned. How about the pupil who may be just a little above the average in some trade, who would find happiness in self-expression, but who is doomed to discontent because he was never given a chance to discover himself until it was too late?

Opinions may differ as to whether we can develop efficiency in any trade by training pupils in the seventh and eighth years of the course. There may be debate as to whether children of thirteen are old enough or mature enough to select their life occupation. But what argument can be advanced against giving them an acquaintance with many different kinds of activity—commercial, industrial, and the like—so that their choice of a vocation shall be made *not in spite of their ignorance of all, but because of an actual, if limited, experience of work in each of the vocations?* Let them learn and know the different trades, so that, knowing, they shall be able later to exercise a free choice. Let us eliminate, as far as we can, the accidental determination of a life pursuit.

If our seventh and eighth years were converted into an experimental period, pupils would soon come to find value in these final years of the course. And if, when the choice had been carefully made, an added year were given to the elementary schools, so that a pupil might receive simple training in his work, we should be producing efficient graduates, with choices rationally made and with an equipment that would increase their wage-earning power. In short, we should be laying the foundations for happiness and competency. Incidentally, we should be holding a greater number of pupils for a longer period in our schools.

Is there the variety of demand that is presupposed by our statement of the needs of the situation? Is it true that pupils in our seventh and eighth years have decided preferences for pursuits, for which no training whatever is given in our elementary schools? In order to determine this, a study was made of 2552 boys and girls in the seventh and eighth years of Public School 62, Intermediate. This school receives pupils from the 6B classes of seven neighboring schools. Almost all the children are Jewish. Each child was told to write a letter to the principal of the school, covering these points:

1. What do you intend to do when you go out into life?
2. Why do you make this selection?
3. If you could begin at once to prepare for this pursuit what would you like to take up?

The idea was to secure a statement of,—

1. Choice.
2. Reasons.
3. Pupils' ideas of content of courses.

Before any attempt is made to present the results of this study, one fact must be made clear. The mere choice of a certain vocation on the part of the pupil should not mean that such vocation is necessarily to be followed by him. Guidance is more important than choice. The selections here indicated were made under conditions which made it impossible for children to have discovered themselves. They were judging relative values, as will be seen, not in terms of their own powers but largely in terms of the degrees of desirability of the work they intended to engage in. The point to bear in mind, however, is that with a thorough-going academic course, wishes at all events, have already been registered in their minds.

In order to make the choice more intelligent, the words Academic, Industrial, and Commercial were used and carefully explained to all the pupils.

TABLE 1.—CHOICE OF VOCATIONS.

	Academic	Industrial	Commercial	Totals
Boys	396	273	440	1109
Girls	376	326	741	1443
	772	599	1181	2552

Assuming that we had a perfect academic course, we should then be supplying the needs of 772 out of 2552 pupils, 30 per cent. In this particular section of the city there are many "business schools" which turn out as from a hopper, stenographers and bookkeepers often with one year's training or less. Such schools meet the needs of 46 per cent of the pupils. The remaining 24 per cent of the pupils wish industrial work, and the only agency in the seventh and eighth years, outside of the Vocational Schools for Boys and for Girls (where car fare is a deterrent factor), is the course in woodwork and hand-sewing, with a little training in sewing on a foot-driven machine.

What are the considerations that influence pupils in their choice of a vocation? What is the occupation they wish to follow, preparation for which involves study in the courses indicated?

The second of these investigations is extremely interesting as affording an insight into the definiteness of the selection made by pupils.

TABLE 2.

Among the 396 boys selecting an academic course, these ambitions are to be noted,—

Architect	4
Astronomer	2
Artist	2
Chemist	3
Civil Engineer	19
Civil Service	16
Doctor	65
Electrical Engineer	2
Forester	1
Lawyer	76
Literary Man	4
Musician	4
Optometrist	1
Orator	1
Pharmacist	19
Philosopher	1
Rabbi	1
Surgeon	2
Teacher	45
Veterinary Surgeon	1
Total	269

The remaining 127 will be accounted for in another way.

TABLE 3.

Among the 376 girls selecting an academic course these ambitions are to be noted,—

Teacher	220
Physician	12
Nurse	10
Dentist	2
Music Teacher	6
Librarian	17
Teacher of Athletics	2
Lawyer	16
Author	5
Artist	3
Teacher of Drawing	2
Pharmacist	2
Musician	2
Total	300

The remaining 76 will be accounted for in another way.

TABLE 4.

Among the 273 boys selecting an industrial course these ambitions are to be noted,—

Carpenter	23
Electrician	20
Civil Engineer	64
Machinist	10
Plumber	8
Printer	12
Telegrapher	5
Designer	6
Surveyor	4
Diamond Setter	1
Farmer	4
Mechanician	4
Letter Carrier	1
Post Office Clerk	1
Artist	11
Builder	4
Machine Designer	1
Factory Owner	1
Furniture Maker	1
Inventor	1
Tailor	1
Teacher of Manual Training	2
Wool Manufacturer	1
Engineer	6
Automobile Industry	1
Pattern making	2
Cloak and Suit Cutter	2
Mechanical Engineer	1
Electrical Engineer	5
Jeweler	1
Chauffeur	2
Forester	2
Bookbinder	3
Cabinetmaker	10
Motion Picture Operator	1
Mining Engineer	1
Ironworker	1
Total	232

The remaining 41 will be accounted for in another way.

TABLE 5.

Among the 326 girls selecting an industrial course the following ambitions are to be noted,—

Dressmaker	143
Milliner	75
Milliner and Dressmaker	22
Designer	34
Teacher of Cooking	2
Photographer	1
Nurse	3
Artist	4
Embroiderer	9
Embroidery Designer	1
Librarian	6
Total	280

The remaining 46 will be accounted for in another way.

TABLE 6.

Among the 440 boys selecting a commercial course, the following ambitions are to be noted,—

Grocer	1
Florist	1
Jeweler	1
Salesman	81
Traveling Salesman	82
Bookkeeper	186
Stenographer	69
Office Clerk	6
Bartender	1
Reporter	1
Public Accountant	2
Banker	3
Typewriter	4
Letter Carrier	2
Post Office Clerk	2
Bank Clerk	7
Shipping Clerk	3
Foreman	1
Wholesale Dry Goods	1
Jewelry Business	1
Commissioner of Deeds	1
Telegrapher	1
Stenographer, Typewriter and Bookkeeper	1
Broker	1
To know how to pay workmen	1
Total	440

TABLE 7.

Among the 741 girls selecting a commercial course the following ambitions are to be noted,—

Bookkeeper	262
Saleswoman	25
Typewriter	30
Stenographer	39
Bookkeeper, Typewriter, and Stenographer	51
Cashier	2
Office Assistant	6
Bank Clerk	1
Bookkeeper and Typewriter	22
Bookkeeper and Stenographer	4
Stenographer and Typewriter	97
Buyer	7
Clerk	1
Composer	1
Traveling saleswoman	1
Total	559

The remaining 182 will be accounted for in another way.

Were the courses of various kinds given to the children of the seventh and eighth years it is probable that choices would be entirely different. Moreover, were the teachers afforded an opportunity to observe children at work in the various courses they would be able to add to their original judgment of aptitude the results of their observation, and so might make intelligent suggestions to influence choice. For it is to be noted that with a definite aim in view, children have selected the wrong course.

In some instances, the choice indicated clearly that the child had made a selection and still was entirely wrong in conception as to the nature of the course.

This was true in the following cases:

	Academic	Industrial	Commercial
Boys	4	3	6
Girls	0	0	0

In some cases the choice was made and no aim at all was stated:

	Academic	Industrial	Commercial
Boys	0	0	0
Girls	4	0	14

The mere fact of personal preference sufficed as a reason in many cases:

	Academic	Industrial	Commercial
Boys	1	1	0
Girls	46	20	128

The wish of parents was frequently cited as the only reason for the choice. The numbers are:

	Academic	Industrial	Commercial
Boys	11	11	21
Girls	9	6	22

A general liking for the content of the course was occasionally cited as a reason:

	Academic	Industrial	Commercial
Boys	30	14	0
Girls	19	7	0

In some cases the selection was based on the child's aptitude for such phases of the work as had already been taken up in the regular course:

	Academic	Industrial	Commercial
Boys	0	0	2
Girls	0	6	3

The desire to help parents in their work was cited as a reason:

	Academic	Industrial	Commercial
Boys	0	1	1
Girls	0	0	2

Miscellaneous reasons were given as follows:

	Academic		Industrial		Commercial	
	B.	G.	B.	G.	B.	G.
To lead a useful life	1	1	..	..	..	1
Course is short	..	..	..	..	5	5
Desire to be happy	..	..	..	..	..	1
Because of health	..	..	..	..	..	1
Work is easy	..	..	1	..	18	1
Salary is good	2	..	9	..	1	1
Course is practical	..	..	2	..	3	..
Step to higher work	..	..	..	1	1	..
Postpones need of final choice	1	..	..	..	..	..

An interesting study was made of what the pupils should like to have the various courses include:

ACADEMIC COURSE

	Boys	Girls
Mathematics	102	240
Grammar	2	..
Spelling	9	..
Latin	50	89
Music	3	15
Current Events	1	..
How to overcome obstacles in life	1	..
How to use surgical instruments	1	..
Drawing	14	..
French	179	1
Chemistry	19	..
German	45	1
Modern Languages	43	63
English	72	254
Spanish	18	..
History	32	56
Geography	33	1
Reading	2	1
Medicine	25	..
Biology	7	..
Civics	5	..
Law	31	..
Hygiene	16	2
Physiology	1	..
Penmanship	6	..
Contracts	2	..
Botany	5	..
Greek	15	..
Astronomy	1	..
Art	1	..
Italian	5	..
Russian	1	..
Debating	2	..
Science	2	..

INDUSTRIAL COURSE

	Boys
Surveying	2
Plumbing	2
Languages	5
Arithmetic	113
Grammar	1
Agriculture	1
Botany	2
Penmanship	8
Latin	
German	

	Boys
French	19
Geography	23
History	6
Spanish	7
English	56
Salesmanship	3
Art	2
Electricity	13
Carpentry	11
Machine Work	10
Mechanical Drawing	22
Free Hand Drawing	15
Woodwork	24
Science	22
Designing	5
Printing	3
Astronomy	1
Architecture	2
Bookbinding	1
Foundry Work	2
Metal Work	1
Tailoring	1
Woodturning	3
Geometry	4
Engineering	2
Algebra	1
Painting	1
Greek	1
Polish	1
Russian	1
Turkish	1
Spelling	5
Reading	1

COMMERCIAL COURSE

English	137
Mathematics	172
Penmanship	81
Geography	38
Commercial Law	2
History	12
Science	2
Drawing	3
German	16
Letter Writing	10
Geometry	1
Designing	1
French	33
Spanish	20
Buying	5
Salesmanship	31
Physics	1

Botany	1
Italian	2
Dutch	1
Languages	12
Bookkeeping	59
Typewriting	35
Stenography	65
Algebra	1
Designing	2
Spelling	13

A similar study of the content of commercial and industrial courses as judged by girls has not been tabulated, owing to circumstances which lead us to question the value of the data.

It is interesting to note how definite is the demand. There is little or no suggestion of basic preparation, of a training larger than the need of the occupation itself. An ordinary trade school or a private business school will give the narrow work desired by these pupils. It requires a larger view of social and economic needs to build upon these desires of the children, a broad, fundamental preparedness making for greater efficiency in any particular vocation. How can this be done in a school of the type of Public School 62, Manhattan?

It may be well to make clear at the outset that an intermediate school offers many opportunities for organization which do not exist in the regular grades of an elementary school. The number of pupils in the seventh and eighth years is much larger; in this school almost 3000 pupils are enrolled in the last two years of the course. There are three shops, three kitchens, two sewing rooms, a typewriting room, two science rooms, and one laboratory. There is space for the equipment of special rooms for the various industries as they are taught.

The following plan of organization is suggested:

1. Secure from the principals of 6B schools a detailed statement of the special aptitudes and weaknesses of pupils entering the intermediate school. Classify new admissions on the basis of these reports so as to secure a certain degree of homogeneity in the composition of each class.

2. Institute tests of a general nature in the 7A grade, to determine general intelligence, manual skill, power of judgment in practical situations, etc. Tabulate all such findings for future reference. Münsterberg tests or others of a similar nature may be used to furnish a basis for teachers' judgments.

3. Beginning with the 7A grade and extending through the 8A grade, courses should be established in electric-wiring, sheet metal work, wood-turning, leather work, etc., for boys, and in

dressmaking, millinery, embroidering, machine work, etc., for girls. Each course should extend over a period of nine weeks, thus affording a series of six courses. All pupils should be required to take each course in turn. Time schedules should be so arranged that at least eight hours a week may be devoted to the special courses. No attempt should be made to do more than acquaint the pupil with the fundamental simple processes underlying the various occupations.

4. Every pupil should be carefully observed while at work and a detailed record kept of his or her proficiency in the course. The work should be so planned as to make data available with regard to general adaptability, rather than to give skill in the occupation as such.

5. During the 8A grades, conferences should be held between parent, pupil and teacher, the results of the tests and the records of the course should be carefully examined, and the pupil should be directed into the course for which he appears to be suited and in which all conditions combine to make it probable that he will become efficient.

It is in the 8B grades that the special training should begin. Small groups should be formed for each course. Intricate processes cannot be taught nor can work of a heavy nature be undertaken. One of the objects sought in the studies of the Vocation Bureau of Boston is stated thus, "To analyze the relation of aptitudes, interests, and habits to modern industrial demands, and thus lay an adequate foundation for a system of training regardful of social as well as economic needs." Whatever training is given should be along lines determined by some such study as this. The courses should be checked up constantly by the results of occupational investigations and must be organized with an ever-present ideal of sympathetic vocational guidance.

Pupils who wish to enter a classical high school with the idea of graduating should be enrolled at the beginning of the 8B grade in classes organized for such pupils. Special attention should be given to technical grammar, to the fundamental principles underlying arithmetical operations, to oral English with particular reference to the technique of correct speech, to penmanship, to the mechanics of written language, spelling, punctuation, etc., and to teaching pupils how to study.

Pupils who intend to complete the full course in a commercial high school should be enrolled at the beginning of the 8B grade in classes organized for such pupils. Special attention should be given to correct oral English, as regards both the technique of speech and freedom from foreign idioms; to letter writing; to study of business forms; to an explanation of the principles underlying the various

kinds of business to which arithmetic applications are made, such as commission, discount, insurance, etc.; to commercial geography, and to modes of manufacture.

Pupils who intend to complete the full course in a manual training trade high school should be enrolled at the beginning of the 8A grade in classes organized for such pupils. Special attention should be given to correct oral English, as regards both the technique of speech and freedom from foreign idioms; to mechanical and free-hand drawing, to the fundamental arithmetical operations; to simple constructional geometry; to elementary algebra; to science; to modes of manufacture in the various industries; to shop-work.

Girls who intend to complete the full course in a technical high school should be enrolled at the beginning of the 8B grade in classes organized for such pupils. Special attention should be given to sewing (hand and machine), embroidering, with applications to dressmaking and millinery; to cooking and a study of food-values; to home-making in general. For the last named work, use should be made of the model flat built for this specific purpose.

This will leave a large number of pupils who, under ordinary circumstances, would leave school at the end of the eighth year, or when they had attended a half year or more at a high school. During the year and a half, from the beginning of the 7B grade, the aptitudes of these pupils have been tested at the different occupational activities carried on; their general intelligence and their special powers have been carefully noted. A study should also have been made of their home conditions, the needs of the family, etc. The principal or competent teachers should have held interviews with the parents with a view to arriving at some knowledge of the pupils' aims and those of his family. The "vocational guide" should proceed to suggest what line of work the pupil should take up.

If there is still uncertainty as to what the ultimate choice is to be, the academic course should be recommended. For those intending to enter business, the commercial course should be urged, while the industrial course should be recommended to those who wish to enter one of the trades.

The term in these courses should be one and a half years. In this way, for pupils who ordinarily would leave school at the end of the eighth year, we shall be adding a year to their school career, giving them a quality and a degree of preparation which will soon convince parents that the extra time spent in school is more than compensated for by the increased efficiency,—yes, and the increased earning power of the child who has this more extended preparation. It may be urged that parents will not be able to afford to keep their children at school for the longer period. This may very well be t—

Still it must be borne in mind that where legislation has prolonged the compulsory school attendance period, parents have found the means to support their children at school. When the grade at which pupils may apply for employment certificates was made 7A instead of 5B, parents resigned themselves to the inevitable and adapted themselves to the situation as best they could. Under the plan set forth, however, the force which compels the longer stay in school is not exercised by a law but by the self-interest of pupil and parent. Is it not reasonable to expect that once the work has justified itself, parents will be more than willing to have their children remain in school for the extra year?

Many graduates from our elementary schools enter a business school for a training of a half year. The commercial course which is here suggested, will keep many pupils in the school and the city will for the first time be meeting a need which has for many years been clearly expressed by the people of the community.

The records show that large numbers of the pupils who enter our high schools from the elementary school, stay in the secondary institutions for a year or so and then drop out. A certain percentage of this "mortality" has been rightly attributed to the inflexible course of study, to poor teaching, to the unpreparedness of the pupil for independent study. But all the discharges cannot be traced to any one of these causes or to any combination of them. In many cases parents are so situated that they can afford to keep the boy or girl at school for one year, but no longer. Under the present system the only place for such pupils to go to is the high school. They are not really a part of the student body, they cause an unhealthy condition as regards size of classes in the first two terms, they call for large and expensive buildings, they create problems of management, of organization, of discipline, of supervision, which inevitably reduce the efficiency of the school. The pupils who have come to the high school for the purpose of completing the entire course are to a certain extent neglected, because of the great number of transients on the register.

If the ninth year which is here recommended were adopted, such pupils would not clog and clutter up the administrative and supervisory channels of our high schools. They would not be sent out into the world with such inadequate equipment as must necessarily result from a truncated course. For they all have had one-fourth of some subjects, one-third of others, one-half of still others. Their work ends nowhere. They have no general culture, they have no special training. In the ninth year, however, they will receive a complete course. True, they cannot get as much training as would be theirs were they to complete the entire course in an academic, a

manual training, or a commercial high school. But they will be far more efficient than the derelict high school student who leaves at the end of one year; who does not know what he wants to do, or who, if he does know, cannot do it because he has had no training for it.

The planning of the work for such courses calls for much careful thought and systematic preparation. A body of opinion should first be gathered from men of affairs representing different outlooks, different occupations, etc. This may be considered the norm by which to test any course that may be evolved by educators. In every case, the course should be adapted to the community, and due regard should be had for the kind of pupils the course is intended to serve.

There may be some doubt whether a purely academic course should find a place in a ninth-year school, the aim of which is to increase vocational efficiency. As a matter of fact, this course is intended merely to relieve the situation as it exists in our classical high schools today. Arrangements should be made whereby pupils may be transferred from the academic course to either the industrial or the commercial, as soon as the more special demand makes itself felt.

The academic course should include literature, current history, business conditions, business arithmetic, science, civics, music, and physical training. If possible there should be work in ethics through organized activities involving personal, civic, and social service.

The commercial course should include business English, office practice, business arithmetic, commercial geography and bookkeeping.

The industrial course should cover for boys and for girls a complete course in the occupation, the training to extend over the full year and a half. In no course should work in English, oral and written, and in civics, be omitted.

The details of these courses must be worked out with the greatest care. Much preparatory work has already been done. Analyses have been made of some of the industries, and the processes have been reduced to their simplest elements. We are coming to understand better the principles that must govern the elimination of non-essentials from the traditional academic and commercial courses. All this, however, is a matter of time. The experiments will be tentative, and there must always be the frankest kind of self-criticism. But in work of this kind lies what seems to be a constructive attempt to meet one phase of the problem of elementary school education in its relation to the efficiency of the individual and the progress of the state.

PHYSIOLOGICAL AGE AND SCHOOL STANDING.

By Irving King,

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The following study is the initial report of an investigation under way in the Iowa City grammar and high schools, which it is hoped may be extended over several years. Its object is to record as accurately as possible the incidence of physiological maturity in each pupil with special reference to proficiency in school tasks and to progress through the grades. All pupils between ten and a half years and seventeen years old are being considered in order to secure the records of the antecedent and the subsequent age-groups, *i. e.* the immature and the mature, for comparison with the maturing group, as well as to enable us to compare the records made by each individual in these three stages of development. We wish to discover whether, in this group of pupils, there is any difference in school ability and school progress in the three stages of development, whether maturing at a later chronological age than usual is less favorable to the individual than an early or median age, and lastly, whether the physiological age has any observable relation to elimination from school.

The present report deals only with the pupils who attended the grammar school during the year 1912–1913. The degree of maturity was estimated by the principal and a discriminating woman teacher, through careful observation of the height and general physical appearance of each individual. No regular physical examinations were possible.[1] It is hoped that the remainder of the study can be based upon physical examinations of both sexes. While estimates of the degree of physical maturity made by our method are necessarily subject to some error, we believe that they closely approximate the facts. Our determination to try this method in the absence of a better, was based on the statement made by Dr. F. L. Foster[2] to the effect that where physical examinations cannot be made, a fairly accurate classification of pupils according to physiological age can be made on the basis of height and general physical appearance.

The only studies along the same line as this with which we are familiar are those by Dr. Crampton and Dr. Foster, which are referred

[1] A similar method is reported by Dr. C. Ward Crampton in his paper, "The Significance of Physiological Age in Education," *Proceedings of Fifteenth International Congress on Hygiene and Demography*, 1913.

to in this article. Dr. Crampton states that there is a direct relation between physiological maturity and mental ability, the pubescent and mature boys doing better work than the immature; and that early or average pubescence is more favorable than that occurring a year or two later.[3] Dr. Foster believes, on the basis of experiments in a New York City boys' high school, that boys who are grouped in classes according to physiological age, rather than according to chronological age, do better work than in classes in which physiological age is ignored.[4]

The following table (I) shows the distribution of our 271 grammar

TABLE I.

Ages	136 Boys			135 Girls		
	Immature	Maturing	Mature	Immature	Maturing	Mature
10½.....	6	..	..	4	1	..
11.....	4	..	..	3	2	..
11½.....	12	1	..	5	3	..
12.....	8	2	..	8	3	..
12½.....	13	3	..	5	12	2
13.....	7	9	..	4	12	4
13½.....	9	19	1	2	11	8
14.....	3	12	1	..	8	11
14½.....	2	6	7	..	5	9
15.....	..	2	3	..	4	3
15½.....	1	1	..	..	1	1
16.....	..	1	2	..	..	4
16½.....	..	..	2	..	..	..
Totals...	65	55	16	31	62	42

school pupils accor[illegible] of physiological de[illegible]

[3] "Physiological [illegible] tion of Pubescence [illegible]
[3] "The Influence [illegible]
[4] Foster, *Op. cit.*

From this table one may easily see the incidence of maturity for the sexes by half years from ten and a half to seventeen.

Table II shows the distribution of the school marks actually received by these pupils, according to age, sex and degree of maturity. In almost every case there are five marks for each pupil, the marks for such subjects as writing, music, manual training and domestic science not being included. Five grades are used in ranking these pupils, Excellent, Good, Medium, Poor, and Failure. In practice the mark of "G" is probably nearer the average of ability in the class than is the mark of "M". It seems fair, in any case, to group the marks of "E" and "G" together as standing for good to fair work and the marks "M", "P", and "F" together as standing for inferior work. The limited number of pupils available for this study makes this classification of the marks into Good and Poor much more satisfactory than a finer grouping would be. It better reveals the general tendencies and these are all that we can hope to arrive at in any case.

From this table we can see the total number of high and low marks received by each sex for each half-year of chronological age and for each stage of physiological development. By computing the percentages which the high grades are of the total number of grades received by each sex and physiological age, we are able to compare the total standings directly with each other.

PERCENTAGES OF GOOD GRADES.

	Immature	Maturing	Mature
Boys	68.4	57.8	45.7
Girls	71.0	60.9	56.6

It appears from the above figures that the girls of each physiological age make slightly better showings in their marks than do the boys of corresponding degrees of development; that the prepubescents of both sexes do better than the pubescents, and that the pubescents are superior to the postpubescents.

It is of interest to see how these high and low marks are distributed through the various classes of the grammar school and in table III on page 226 this is shown in percentages, for greater ease of comparison. The table does not throw any great light on the problem in which we are here interested, namely,—the relation of physiological age to school standing and school progress, because chronological age is not considered. Grade 7b, for example, contains immature boys of several different chronological ages.

TABLE II.

AGE-MATURITY DISTRIBUTION OF HIGH AND LOW MARKS. (THE UPPER NUMBERS IN EACH SPACE REFER TO THE BOYS AND THE LOWER TO THE GIRLS.)

Ages	Immature		Maturing		Mature	
	E–G	M–F	E–G	M–F	E–G	M–F
10½.....	30 14	.. 6	.. ..	.. 5	.. ..	.. ..
11.....	18 15	2 ..	.. 8	.. 2	.. ..	.. ..
11½.....	42 19	18 6	1 14	4 1	.. ..	.. ..
12.....	28 30	12 10	8 11	2 4	.. ..	.. ..
12½.....	43 16	22 9	9 41	6 19	.. 7	.. 3
13.....	20 12	16 8	23 39	22 21	.. 17	.. 3
13½.....	26 4	19 6	49 28	41 27	.. 25	5 15
14.....	8 ..	7 ..	37 23	23 17	5 29	.. 26
14½.....	7 ..	3 ..	21 17	9 8	19 25	16 20
15.....	.. ..	.. ..	7 8	3 12	3 5	12 10
15½–17....	.. ..	5 ..	4 ..	6 5	8 11	12 14
Totals...	222 110	104 45	159 189	116 121	35 119	45 91

Age 10½ means the group from 10½ to 11, and so on with each age group.

TABLE III.

DISTRIBUTION BY PERCENTAGES OF HIGH AND LOW MARKS ACCORDING TO SCHOOL GRADE, SEX AND PHYSIOLOGICAL AGE. (THE UPPER NUMBERS REFER TO THE BOYS.)

Grades	Immature		Maturing		Mature	
	E-G	M-F	E-G	M-F	E-G	M-F
6b.....	82	18	..	100	..	..
	89	11	..	..	..	..
6a.....	45	55	50	50	..	..
	54	46	40	60	..	..
7b.....	78	22	37	63	30	70
	65	35	64	36	60	40
7a.....	57	43	50	50	..	100
	65	35	57	43	60	40
8b.....	76	24	53	47	45	55
	60	40	70	30	52	48
8a.....	70	30	80	20	85	15
	..	..	65	35	63	37

This group of immature boys is not therefore a homogeneous group, some being normal in their development and others retarded. This lack of homogeneity renders very uncertain any conclusions that one might attempt to draw from class groups alone. The table is presented for its negative rather than for its positive value.

On this point of early and late development Boas says in a recent article,[5] referring to the investigations of Porter and Crampton, "These observations make it plausible that the assumption which has been made so frequently—that a period of slow development of the body is correlated with a period of rapid development of mental faculties and vice versa—is not correct, but rather that rapid physical and mental development go hand in hand." And the same authority in another article, "We must not commit the error of identifying physiological development with physiological age, or of considering chronological age as irrelevant. . . . We must not assume that individuals who exhibit the same stages of physiological development are the same, physiologically speaking, no matter what their actual age may be; on the contrary, the past and prospective physiological changes in their bodies will proceed in different

[5] "Growth," *Cyclopedia of Education*, II, 189.

manners."[6] The presumption is that the mental development will also be different according as to whether the prepubescent or the pubescent pupil is young or old in his group, *i. e.* normal or retarded in his development, as compared with his fellows of the same age in years.

With reference to this point it is fortunately possible, from our data, to compare various age-groups in the different degrees of maturity. Thus we can compare immature boys of thirteen years and under with immature boys of over thirteen. Similar divisions of young and old maturing and mature can be made. The divisions into younger and older groups which is here presented is based in part upon the distribution shown in table I, in connection with the commonly accepted ages of normal pubescence in the two sexes. We thus get,—

TABLE IV.

THE RELATION OF GOOD AND POOR GRADES IN THE YOUNGER AND OLDER AGE-GROUPS.

Number of Cases		Actual Number of Grades		Percentages of High and Low	
		E-G	M-F	E-G	M-F
43	Immature boys of 13 years or younger...	161	54	75	25
22	" " over 13 years.....	61	49	56	44
45	Maturing " of 14½ years or younger..	127	98	75	25
10	" " over 14½ years.....	32	18	64	36
9	Mature " of 15 years or younger...	24	21	53	47
8	" " over 15 years.....	12	28	30	70
20	Immature girls of 12½ years or younger..	78	22	78	22
11	" " over 12½ years.....	32	23	58	42
33	Maturing " of 13½ years or younger..	113	52	68	32
29	" " over 13½ years.....	76	69	52	48
34	Mature " of 15 years or younger...	98	67	60	40
8	" " over 15 years.....	16	24	40	60

It is clear from this table that the younger groups of each physiological age do better work than the older groups. Since the older groups comprise those pupils who are more or less retarded, or at least late in their development, our figures seem to confirm the statements of Boas, quoted above, with reference to the unfavorableness of late development.

Our next question was with reference to the relative efficiency of pupils of different degrees of development but of practically the

[6] "The Growth of Children," *Science*, N. S., XXXVI, 817, 1912.

same age in years. Only the half year groups between twelve and a half and fourteen and a half contained enough cases of each physiological age to make such a comparison significant.

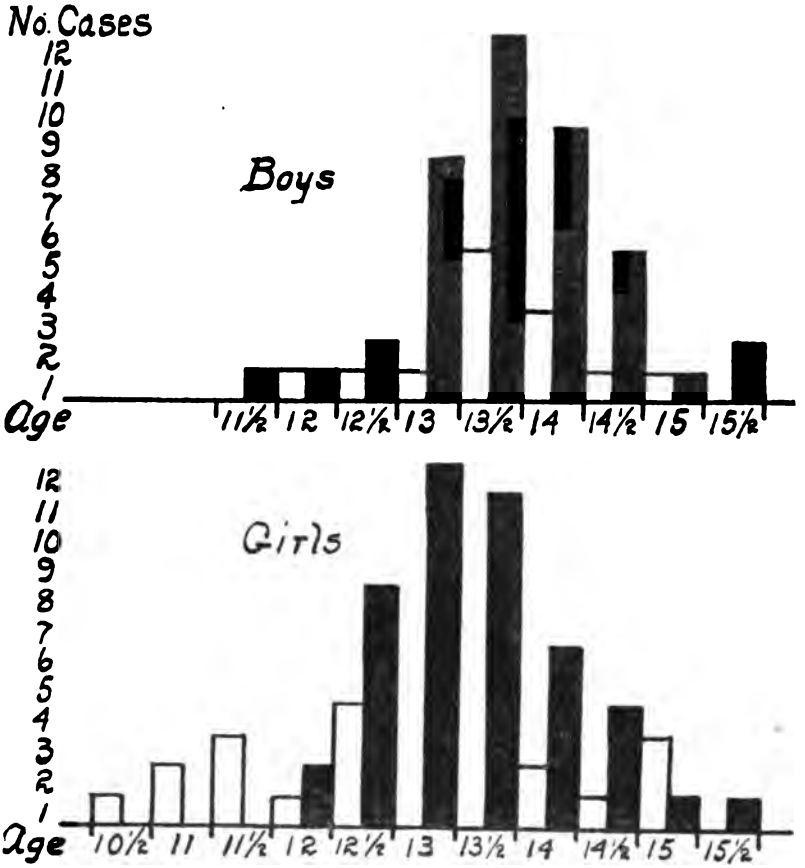
TABLE V.

		Percentage of Good Grades
Girls 12½ to 13 years	Immature	56
	Maturing and mature	69
Girls 13 to 13½ years	Immature	60
	Maturing and mature	80
Boys 13 to 13½ years	Immature	55.5
	Maturing	56
Boys 13½ to 14 years	Immature	58
	Maturing	54
Boys 14 to 14½ years	Immature	53
	Maturing	72

It can be seen from the above table that, age for age, the mature girls do better work than the immature. The boys' figures show a similar superiority in all but one of the groups.

Thus far we have confined our discussion to the high and low marks in their relation to physiological age. Such marks are only a rough measure of intellectual ability; at least they are only *one* of the measures. School progress, or advancement in the grades, while dependent upon marks to some extent, is really another measure of ability. It is possible that degree of progress, irrespective of marks received, is a better index of ability of one sort than are the school marks. The latter measure the degree of brightness at a particular time, while school progress shows whether development has been, on the whole, rapid or slow. With this point in mind we may turn to our data with the question,—what is the present degree of progress through the grades of the different physiological age-groups? Are the pubescents, as a class, generally advanced in the grades, or is their distribution more nearly dependent upon age in years? To answer this question the number of maturing pupils in the three lower classes, 6b–7b, was compared, age for age, with those maturing in the three upper classes, 7a–8a. The following figures show this distribution graphically. The maturing pupils are presented according to half-year age-groups; those of each group who are in the lower classes being indicated by white rectangles while those who are of the same age in years, but in the upper classes, are indicated by black rectangles.

These figures show clearly that the maturing age in both sexes is favorable to school progress, for at every age where there are enough cases to be significant, pupils of this degree of development are found in the upper classes in decidedly greater numbers than in the lower



COMPARISON OF NUMBER OF MATURING PUPILS, AGE BY AGE, IN THE LOWER THREE CLASSES WITH THOSE IN THE UPPER THREE CLASSES. BLACK RETANGLES REPRESENT UPPER CLASSES.

classes. This showing is not inconsistent with the comparatively lower standing indicated above for pubescents in the matter of grades. Maturity, in the case of these pupils, does not seem to be a factor in improving the quality of work, but it does seem to be associated with progress through the grades.

It would not be safe to draw dogmatic or sweeping conclusions from this little study. As far as they go, the findings agree with those of Crampton that progress in physiological age is related to school efficiency. It may be that a later and more extended study of these children, based upon a more accurate determination of physiological age, will lead to different results. In one important respect particularly, these results are in accord with previous studies, in that they indicate that over-age individuals in all the three physiological stages are inferior to those of normal development.

Character Development. By Charles Keen Taylor. Phila.: The John C. Winston Company, 1913. Pp. 241. Illus.

It has been generally understood that the function of the public schools is to receive children as so much raw material at the age of five, or six, or seven, and after working them over, to let them go at fourteen, prepared to make their way and become in time full-fledged citizens of the republic. Many criticisms, destructive and constructive, have been offered, some reflecting upon the finished (or half finished) product, others directed to factors of waste in the process. It has remained for Mr. Charles Keen Taylor,—not the efficiency engineer, but the educator of like surname,—to devise a plan for correlating the various departments of the public school system, making them work together for the best development of the children, and reducing the waste which always results from scattered and duplicated efforts. Not only has Mr. Taylor planned the work, he has carried it out, first in a small and tentative way, then on a larger and more substantial scale, in connection with the elementary schools of Philadelphia, but on funds privately subscribed. In several cities of the west and middle west Mr. Taylor's plan is being adopted and pushed with enthusiasm by administrators of school affairs. How long it will take the more conservative cities of the east to enter upon a course of action involving so radical a revision of their traditions, is a matter which the public may observe with patience tinged with amusement. That the reorganization contemplated by Mr. Taylor,—or some procedure sufficiently resembling it,—will come about, seems inevitable It is demanded by considerations of civic economy.

"The status of a nation," remarks Mr. Taylor, "depends upon the character of its people rather than upon their knowledge of the parts of speech and of arithmetical complexities. . . . A school system, to make a scheme of moral education or character development really effective, should be provided with what might be termed a *Department of Moral Education*, which would be under a director whose work it would be to so correlate the different phases of the system that they would work together for the same end, instead of going at it independently and often at cross purposes. . . . The director should have a good working knowledge of practical child psychology, or he should have an expert child psychologist as an adviser, so that each subject to be studied could be discussed and finally given to children at the proper stage of mental development, and in a method best suited to their natural characteristics—that is, the characteristics natural to them at that time. . . . The departments of medical examination, physical training, and recreation should work closely together. The physical training staff should have at hand the results of the medical and physical examination of every child, and suit their exercises directly to the needs of the children. The department of recreation should see to it that through interest in recreation and sports the children are encouraged to follow the advice of the physical training representatives. The departments of physical training and medical inspection should supply trained nurses and lecturers to aid in branches of the work carried on under the general name of domestic science; for the latter subject

should include practical home hygiene, the care of infants, and the like, and should be given to the girls of the lower grades. . . . The girls who need real domestic science the most are those who must leave school at fourteen. . . . The recreational department should aid the domestic science department by teaching through recreation facts helpful to future housewives. The class-room work in ethics should help all the other branches by showing their ethical significance to the children. And so it is that each one of the various branches which go to make moral education should help the others—and co-operate with them with great increase of efficiency as a result."

After the introductory chapter from which these quotations have been taken, Mr. Taylor outlines a course in character training, proceeding year by year from the six and seven year olds in the first grade, to adolescents of fourteen or fifteen. He starts the little people thinking by asking them, "Why do you come to school?" This opens an informal discussion chiefly by the children with tactful guidance by the teacher. Stories are told to bring out desired points. As the discussion progresses from day to day, the topics of punctuality, obedience, respect, cleanliness, "mine and thine," truth, courage, kindness, are talked about, to the advantage not only of behavior but also of clear thinking and fluent speaking. In the next year the general subject of good manners is broached, and the principle of honesty is developed from the previous lessons on truth and "mine and thine."

At nine years the idea of government is approached through a comparison of the dangerous conditions among which savages live, on the one hand, and on the other hand the privileges enjoyed by dwellers in a civilized community, with police, fire protection, good sanitation and the like. In this grade also Mr. Taylor takes up the application of sewing, manual training, nature study, and games to the development of character.

The chapter for twelve years contains some very interesting suggestions, notably the planning and drawing of an "ideal city" and the keeping of citizenship notebooks, in which the children write anything of importance which they may learn concerning cities in general and their own city in particular, or in which they may paste clippings on these subjects. At thirteen years vocational guidance is undertaken. Co-operation is secured by organizing the boys into groups or clubs, to look into the various occupations toward which they feel most drawn, and to talk over the information collected.

Upon the moot point of sex hygiene Mr. Taylor has very wholesome opinions. Throughout the course in character training the children have been led to admire and to strive for sound, clean, well grown bodies. "In the series of lessons thus far," says Mr. Taylor in the chapter on thirteen years, "there is no direct teaching of sex hygiene. But there is much that will reach this matter indirectly, and perhaps no less strongly for that. The physical development work as outlined for the boys can be used as an opening wedge, and in fact it has acted strongly against the formation and continuance of the bad habits of boyhood. With the girls the work of the housekeeping center, and particularly the actual work with infants, aided by the talks given in the so-called 'baby classes,' also make strongly for clean living. . . . Such direct sex hygiene teaching as there should be before, say the age of fifteen, should be given almost if not quite individually, fitting the teaching to the individual needs."

The volume concludes with a reading list of books for children, a chapter on

"The Health of the Child," and a bibliography on character and allied topics. There is no index. A captious reader could of course find numerous minor flaws in the book, besides this omission of an index. The work would be rendered more easily adaptable for the grade teachers by whom it will chiefly be used, if a syllabus were added, giving a summary of the lessons for each grade, with cross references to show how topics are continued from year to year, and how one topic grows out of another.

The severest criticism that could be brought against the course of training for which Mr. Taylor's book stands, is that it tends to make constant and paramount the already common mental habit of Americans, to label every action as positively right or positively wrong. It is altogether lacking in the sense,—shall one call it the sense of humor?—which knows when to say, "It doesn't matter." Nevertheless, the book is a capital one in its way, and that way is much like the fine old way of the Greeks, who educated their sons and daughters to citizenship by a training in the care of the body, the use of the mother tongue in debate, and the exercise of the imagination to appreciate the rights and feelings of others.

NEWS AND COMMENT.

A Study of Exceptional Children in New Orleans.

The opening of the school year 1913–14 saw the inauguration in New Orleans of a Department of Educational Research, which bids fair to place the school system of that city among the most efficient and progressive in the country. During 1912–13 Dr. David Spence Hill, now director of the new department, while a professor in Tulane University, united with Superintendent of Schools Joseph M. Gwinn in organizing and directing what has been known as the Board of Education—Tulane Co-operative Undertaking. The threefold task assumed was (1) statistical study; (2) investigation of typical cases of exceptional children by systematic co-operation of teachers, parents, social workers, and psychologists; (3) instruction of prospective teachers of markedly exceptional children. The results of this preliminary work were published by Dr. Hill in August, 1913, in a report of ninety-two octavo pages entitled, "Notes on the Problems of Extreme Individual Differences in Children of the Public Schools." The report is in three divisions,—part I, Ideals and Measurements of Results; part II, Individual Studies of Children; part III, Remedies Available and Proposed.

"The number of maladjusted children,—whatever may be the causes,—that our teachers must deal with in New Orleans," remarks Dr. Hill, "is hereby illustrated: the enrolment *in the first grade* of the white schools during 1911 was,—2498 children six years of age, 1794 seven years of age, 695 eight years of age, 281 nine years of age, 212 ten years of age, 60 eleven years of age, 30 twelve years of age, 16 thirteen years of age, 9 fourteen years of age, 8 fifteen years of age, 4 sixteen years of age, 5 seventeen years of age, 3 eighteen years of age." But he adds, "One encouraging feature is that during the past three years a slowly increasing number of children relatively are found in the upper grades and a relatively decreasing number in the lower grades." The superintendent's studies of age-grade distribution in New Orleans for 1911–12 gave the percentages of over-age white children as 48.8 per cent for boys and 44.2 per cent for girls, and of over-age colored children as 75.0 per cent for boys and 73.8 per cent for girls.

Considering the children in grade groups, some surprising facts appear. "Suppose for example," says Dr. Bill, "we subtract from the average of children in the fifth grade during September, the average age of children in the first grade. The result will approximate the number of years it takes the average child to complete four grades. If the child proceeds at about the same rate until the eighth grade, it is possible to estimate from these data also the average time it takes the average child to pass through the eight grades." On the basis of the enrolment for 1911–12 it was found that the average white child takes five years to complete four grades, or ten years to complete eight grades; while the average colored child takes 5.37 years for four grades, or 10.7 years for eight grades. "These figures apply to the majority of children, but are of course only approximately true, for several reasons. The first grade contains many pupils who are repeaters and older than beginners. This factor tends to make our estimate too low. On the other hand, . . . what probably happens is that the exceptionally able children remain after the fifth grade, while a host drop out,—some fifty per cent by the eighth grade." Like other investigators, Dr. Hill finds, "It is not safe to assume that as a rule each of the eight fractions (grades) of the elementary course is of equal difficulty for the respective ages; that one year is the normal time for all pupils and all grades alike."

In order to ascertain in what schools or grades children with extreme individual variations were to be found, and also the kinds of exceptional children in the grades as judged by the teacher, a preliminary census or survey was organized in 1912. Before taking the census the following letter of direction was sent by the superintendent to each grade teacher:

"To The Principal and Teachers:

"1. Please fix clearly in mind the five kinds of exceptional children tentatively classified below.

"2. Let every teacher, with the assistance of the principal, fill in carefully upon the accompanying blank *all the required facts* for her grade.

"3. Let the principal collect the blanks from each grade and enter all the figures upon the blue blanks for principals.

"Please return promptly all the blanks to the superintendent.

"It is understood, of course, that the opinions of the teacher or principal, though given carefully, are unofficial and are merely preliminary to more scientific studies which may be made afterwards in individual cases.

"Such studies of children will be made only with the consent of parents, approval of superintendent, and by appointment made at Newcomb Laboratory of Psychology and Education.

"*Class A.*—Feebleminded or insane children who should be under institutional or home care rather than in the public schools.

"*Class B.*—Backward children (not in Class A) or those who urgently need special educational methods in special classes within the public schools.

"*Class C.*—Exceptionally able or gifted children.

"*Class D.*—Incorrigible, habitually vicious children.

(*a*) Who seem to be of defective mentality.

(*b*) Who seem to be of normal mentality.

"*Class E.*—Children of apparently good intelligence, but suffering obviously

from some serious physical defect, temporarily or permanently unfitting them for the work of the grades.

"(1) Defective vision; (2) Deaf and semi-deaf; (3) Suffering from speech defects; (4) Crippled children; (5) Epileptic.

"November 21, 1912. "JOSEPH MARR GWINN, *Superintendent.*"

The results were compiled in a large table showing the returns from the several schools, white and colored. The following table gives a summary of the preliminary census:

		Total white				Total colored				Total white and colored			
		Numbers				Numbers				Numbers			
		Boys and Girls	Combined	Boys and Girls	Combined	Boys and Girls	Combined	Boys and Girls	Combined	Boys and Girls	Combined	Boys and Girls	Combined
TOTAL ENROLMENT.....	Boys	14,530		Percentages		3,527		Percentages		18,057		Percentages	
	Girls	15,684	30,214			4,083	7,610			19,767	37,824		
CLASS A Feeble-minded, unfitted for public schools	Boys	58		.39		22		.62		80		.44	
	Girls	23	81	.15	.27	4	26	.09	.34	27	107	.13	.28
CLASS B Backward children requiring special class within public schools	Boys	1,336		9.2		323		9.1		1,659		9.1	
	Girls	926	2,262	5.9	7.5	340	663	8.3	8.7	1,266	2,925	6.4	7.7
CLASS C Exceptionally able or gifted children	Boys	128		.9		58		1.6		186		1.	
	Girls	164	292	1.	1.	57	115	1.4	1.5	221	407	1.1	1.2
CLASS D Incorrigible habitually vicious children — 1. Apparently of defective mentality	Boys	92		.6		33		.9		125		.7	
	Girls	15	107	.1	.4	17	50	.4	.6	32	157	.2	.4
2. Apparently of normal mentality	Boys	154		1.		51		1.4		205		1.1	
	Girls	33	187	.2	.6	17	68	.4	.9	50	255	.3	.7
CLASS E With obvious physical defects but good mentality — 1. Defective vision	Boys	397		2.7		75		2.1		492		2.2	
	Girls	480	877	3.	2.9	196	271	4.8	3.5	676	1,168	3.4	3.1
2. Deaf and semi-deaf	Boys	170		1.2		24		.7		194		1.1	
	Girls	162	332	1.	1.1	45	69	1.1	.9	207	401	1.	1.
3. Speech defect	Boys	406		2.8		91		2.6		497		2.7	
	Girls	288	694	1.8	2.3	57	148	1.4	2	345	842	1.7	2.2
4. Crippled	Boys	83		.6		24		.7		107		.6	
	Girls	57	140	.4	.5	13	37	.3	.5	70	177	.4	.5
5. Epileptic	Boys	10		.07		6		.2		16		.09	
	Girls	8	18	.06	.06	9	15	.2	.2	17	33	.09	.09

Before attempting any other use of these results, an organized effort was put into operation for studying as individuals all of the white children designated in Class A. With a few exceptions all of the schools where white children of Class A were reported, were visited by the director, who explained to the prin-

cipals the procedure to be followed, and left the proper blank forms. It was carefully explained that in no case would a study of a child be undertaken except upon the written request of a parent. Principals and teachers co-operated promptly and intelligently. During the year sixty-seven such requests were received, and "practically every child brought under the conditions of investigation was subjected to the usual form board and Binet tests at the Callender Laboratory of Newcomb College," supplemented by a few of the tests of Drs. Fernald and Healy, such as the picture puzzle and *Aussage* tests. Full pedagogical, family, personal, and medical histories were taken, and anthropometric measurements were made of each child. Suspected cases of eye, ear, and throat defects were referred to medical specialists, and tests of blood and excretions were made at the Touro Infirmary.

All of the findings from parents, social worker, teachers, physicians, and psychologists, were collated by a recorder, the whole summary being reviewed finally by the director, Professor Hill. "Afterwards a conference was called between the staff of the laboratory, teachers, principal, parent, and superintendent of schools, where the summary and recommendations in the case of each child were discussed as tactfully and frankly as possible." Nineteen cases are reported briefly to show the kind of information collected from these various sources on blanks adapted from Huey and Goddard.

"What immediate steps should be taken as relief measures pointedly in behalf of children who exhibit extreme individual differences in the schools, is a question pressing upon all cities," says Dr. Hill. In the report of a committee on exceptional children adopted recently by the Public School Alliance of New Orleans, several progressive recommendations were embodied, among them the following:

"The exceptional child is of significance as affecting all of the children. It seems that some such measures as are included in the following typical scheme should be gradually adopted by city and state authorities, measures intended especially for the markedly exceptional child. To put into effect some of the measures here indicated would involve much less expense than would appear at first reading.

"1. (*a*) School for the Training of Feebleminded Children. For the protection, segregation, self-support, and study of feebleminded, imbecile, and idiotic children who have not adequate home care, one institution is needed in the state, to be conducted scientifically and humanely without undue political or sectarian influence.

"(*b*) Hospital Schools. For another class of children there should be hospital schools in the city, where under favorable environment—physical, social, and educational—certain children could be kept under observation while being given a chance to improve their physical and mental status.

"(*c*) Parental Schools. These are similar to the hospital schools, except that they are intended for disciplinary cases, for the incorrigible boy or girl for whom there remains hope and whose age and possibility of betterment should prevent his or her being committed to a reformatory or penitentiary. Parental schools should, of course, have agriculture and industrial features and should utilize some of the pedagogical principles of the Junior Republic.

"2. Special Day Schools. (*a*) For truants and incorrigibles—disciplinary

cases; (*b*) for extremely backward children; (*c*) for the deaf and mute; (*d*) for the blind; (*e*) for the hopelessly crippled, to aid them toward self-support.

"3. Auxiliary Classes within our Present School Buildings. (*a*) For coaching the temporarily backward or handicapped boy or girl; (*b*) for special attention to children reported as exceptionally capable or gifted.

"The Alliance should work for the permanence of the method of educational research in attacking these problems."

It is gratifying to see that New Orleans is approaching an extensive adoption of vocational and trade education because of the opportunity afforded by the legacy of nearly a million dollars from Mr. Isaac Delgado for the equipment of a central trade school for boys in that city. Dr. Hill comments that this "is both an example to philanthropists of New Orleans and other cities, and also a challenge to educators to see that the best results to our people may be assured upon this noble foundation."

"Betterment in the schools of New Orleans and many other Southern cities," Dr. Hill observes, "is slowly coming about by attempts at improvement all along the line—as to buildings, teachers, courses of study, and health conditions." During the year 1912–13 a course of thirty lectures on school hygiene was delivered to students in the New Orleans Normal School by Dr. Creighton Wellman and Professor Hill. In addition a systematic attempt was made to introduce senior medical students at Tulane University to the problems of educational science, a course of five lectures being delivered by Dr. Hill under the title, "Some Educational Problems of interest to the Modern Physician and Sanitarian."

It is safe to say that this investigation conducted by Dr. Hill for the city of New Orleans, is the best scientific contribution which has yet come from a direct clinical investigation of the exceptional children of a city school system. The work as originally undertaken, presented also the soundest basis on which to conduct such an investigation, namely, the co-operation of a university department of clinical psychology and the school authorities. That Tulane University has not been able to continue to play its part in this important co-operative scientific survey, is an evidence of the conservatism—to say nothing more—of some of our departments of psychology and education. Owing to the failure of Tulane University to appreciate the value and importance of this work, Dr. Hill has been compelled to sever his connection with that institution, and is this year devoting himself exclusively to clinical work in connection with the public schools of the city of New Orleans. The character of his report inspires the belief that New Orleans is at the present moment better equipped than any other city in this country to carry forward a scientific survey of the children in its schools, along the lines of sound clinical methods.

L. W.

The Psychological Clinic

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THE SCOPE OF EDUCATION AS A UNIVERSITY DEPARTMENT.

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At the dawn of civilization, education probably began as an induction of the young adolescent to full social union with the adult members of the tribe, through ceremonial rites, tests of endurance and efficiency, and something approximating to a course of study. Perhaps from the beginning, although more likely later in the race's development, this training of the young adolescent assumed a religious aspect, preserved up to the present time by most churches as an indoctrinating of the youth in the truths of religion, usually by means of a course of instruction based upon a catechism, the direct purpose of which is to prepare the boy or girl for the ceremonial of confirmation.

Later on civilization developed a body of useful or supposedly useful knowledge, and we find each generation ardently assuming the task of transmitting to the next generation its traditional and acquired culture. Education thus came to involve a course of instruction in one or more subjects, these subjects only at later stages of development becoming differentiated from philosophy, the mother of all knowledge. In consequence it is natural to find throughout the history of education, that attention has been chiefly directed to the subject matter of instruction. The needs of an individual boy or girl or even of a group were ignored; and really they are even yet a secondary consideration, for the culture and traditions of the race must be upheld at any cost. This ideal of education we find best represented in the college course, which originally undertook the instruction of the young adolescent in the cultural elements of the philosophy of his day, though not always of his generation, for the traditional element in this instruction has always given the

college curriculum an inclination backward rather than forward. Nevertheless there has been a development, an augmentation of the subject matter of instruction, leading to a lengthening of the course, until at the present time the standard cultural course for adolescents has been increased from four to eight years, comprising four years in the high school, followed by four years in the college. It should be remembered in all discussions of the relation of the college curriculum to the students and to the culture of our generation, that the high school pupil comes to college today at about the age and with the equipment which our grandfathers had when they left college.

A different type of education also developed very early in the history of civilization, a technical or professional training, first perhaps for the priesthood, then for medicine, then for law, and now only recently for what in my opinion is to become the greatest of all professions, the profession of teaching. Differentiated from what a real professional training should be, there has been and always must be a training of a more mechanical or technical sort, although it is not an easy matter to draw a sharp line between a professional and technical training. Nevertheless the acquisition of a technique rather than a wide range of information and high degree of intellectual functioning, is the chief aim of the training of the musician, the artist, the engineer, and those employed in vocations supposed to represent a lower level of intellectual attainment, the trades and business.

At first concerned only with the adolescent period, the training of the pre-adolescent being left to the amateur efforts of the family, education finally took over the child from his seventh year to puberty, and organized for his benefit an eight-year course of instruction, at first limited to only a few children, but during the progress of the last century, through the adoption of universal compulsory education, applied in theory at least to all children. In the elementary course the subjects of instruction, that is the *curriculum*, as in the secondary and college courses, have had the center of attention. In general, the elementary course of study incorporates the ideal of modern society that every child before he goes to work should know at least how to read and write and cipher. To this irreducible minimum other subjects have been added, as many indeed as are permitted by the limitations of time and the necessity of the child to contribute to his own support. With a general ideal of the content of popular education, formal pedagogical methods have been devised and directed to group units, representing the eight grades of the primary school, wherein attention is centered on the passage of groups of children from grade to grade, the prescribed

curriculum of each grade being the same for all children. The chief agent for the execution of this work is the grade teacher. She must know what is to be taught; she must know standard pedagogical methods. In general, the grade teacher is now doing her work well and is adequately equipped for her task by the normal school.

The development of a conscious social impulse and the growth of the science of psychology led at first slowly, and then more rapidly, to a restatement of the motive of education and a reconsideration of its methods. The first proposal to create a system of education to fit the recognized needs of a particular group of children, came from Froebel and led in time to a half-hearted acceptance of the Froebelian kindergarten as a part of the school system. From the standpoint of psychology the kindergarten is yet the best attempt at a scientifically grounded system of education, even though we are compelled to admit in the same breath that the Froebelian philosophy has always been a distorting factor, leading to confusion on the part of both its adherents and its critics. In more recent times the psychological attitude toward the educational problem has expressed itself in a tentative way through the treatment of truants and other disciplinary cases, the methods employed in classes for backward children, and the efforts which are being made toward a satisfactory vocational training. It is recognized now that there are groups of exceptional children calling for exceptional educational treatment, and we even hear it said that the exceptionally bright child should not be lost in the class group. The problems of intellectual differences in children and the adjustment of the curriculum and methods to the individual, or at least to groups of individuals, have come to be accepted as important problems of school administration. What often fails to be recognized in the discussion of these problems is that we hereby come to a new departure in education, revealing a social motive and a psychological method distinctly different from the accepted and primary aim of education, *i. e.* the instruction of youth in the traditional and acquired knowledge of the adult generation. Undoubtedly there has always been present in educational discussion a recognition of the fact that education is after all a process of individual development, but it is scarcely recognized even yet that the phenomena of individual development fall within the scope of the science of psychology. The whole problem of the mental development of an individual personality belongs to genetic psychology, and too much emphasis can not be laid upon the fact that competency to discuss or minister to the mental and physical development of the individual child must be scientifically grounded upon the facts, principles, and methods of modern psychology. There is no

fundamental difference between one kind of psychology and another kind. All psychology that is worth while is experimental, physiological, and genetic. Nevertheless psychology may address itself to problems of general mental development, overlooking for the moment individual differences. On the other hand, it may take the problem of group differences and through the employment of the statistical method evolve a comparative psychology. It may also confine its attention to the ascertainment of the mental and physical status of a given individual, endeavoring to interpret his present condition in the light of his past history, and employing this knowledge to prognosticate his future and select the best agencies for advancing his development. This field of psychology I have called clinical psychology. In general its object is to know the personality of an individual child and to determine how best to get him to make the longest possible step forward. When the object of education is defined as the development of a child's natural endowments to the highest degree of efficiency possible, the object of education is being defined in terms of a clinical psychology.

Here I believe we can and must draw a line between the purposes of psychology and pedagogy. Pedagogy deals with mass instruction, and is justified in being content with a psychology which presents for school purposes an abstraction, the typical or normal mind. As a psychologist I naturally approach the problem of education from the psychological point of view, but I trust I may never underestimate the importance of the function of the schools to train groups of children, assumed to be mentally homogeneous, in the recognized subjects of the curriculum, by approved pedagogical methods, guided by competent supervisors. But questions relating to the curriculum and to methods can not be discussed without confusion and obscurity if we fail to realize that individual differences must be ignored by those who are engaged in the solution of this most important part of the public school problem. Because the schools are required today to take cognizance of individual differences, and to provide somewhere within the system for an education based upon the psychological principles of individual development, it must not be assumed that this point of view must be either hastily or heedlessly injected into the discussion of the general problem of pedagogical technique. The grade teacher, the high school teacher, and the college teacher, do not require a thorough grounding in the facts and methods of psychology. For them to become psychologists and to regard too intently the individual personality of their pupils, would seriously diminish the efficiency of their work. These teachers require a thorough grounding in the subject matter of the curriculum which they are required to teach,

combined with an adequate training in the methods of good teaching. Nevertheless there must be officials connected with the school system who are competent to look upon the problem of education as a problem of individual development, who know their psychology as well as their pedagogy, and who are prepared to reclassify groups and to adjust the curriculum and methods of educational treatment to meet the needs of individuals and groups. In my opinion it is a mistake to ask or to expect the grade teacher to secure the training in psychology necessary to undertake this task. It should be left to those to whom we have assigned the function of supervision, among whom I include supervising principals. In other words, the growing demands of educational practice require us to recognize within the profession of teaching two groups of differently trained persons—the grade teacher, who is and must remain a mechanic, a technician, and the educator who must be a man or woman of high professional attainments.

These professional attainments must rest upon a solid basis of knowledge in such modern sciences as psychology, sociology, biology, hygiene, physiology, etc., as well as the usual equipment in administrative procedure and pedagogical technique. The educational administrator, or as I would call him more briefly, the educator, should occupy by virtue of his professional attainments a position analogous to that of the general practitioner of medicine, the family doctor. The requirements of modern school administration call also for an educational expert, or we may call him a clinical psychologist, who will perform the functions of a consultant in connection with difficult problems which may be referred to him for advice. The clinical psychologist or educational expert will perform a function in the schools analogous to that of the medical consultant or specialist in nervous diseases, surgery, internal medicine, etc.

The diversity of function which I have posited for the grade teacher on the one hand and the educator or educational expert on the other, has an important bearing upon the part which our universities should play in training students for the profession of teaching. Let us rid ourselves of the notion that grade teachers and educators can come out of the same mill, namely, the normal school, even though that normal school be called a teachers' college and be connected with a university.

It is the function of a normal school to train good teachers for the grades. It is not so necessary for an educator to be a good teacher. He needs only to be a good critic of teaching, to know good teaching when he sees it. It is absurd to believe that a man must always be able to do expertly what he is able to criticize. One

does not need to be able to lay an egg, to distinguish between a good egg and a bad one. Nor does one need to be able to write good poetry or compose good music, to exercise a discriminating taste in literature or music. The great successes in administration, whether they be in education or business, are often achieved by executives who know enough to select assistants who can do the work better than they can do it themselves.

There must therefore be a fundamental differentiation between the training which will equip doctors of education and educational experts, and the training which will make a good grade teacher. In my opinion it is the function of the university through its graduate school to train the educator and the educational expert. In the college, courses in education should be offered which may be taken, along with courses in biology, psychology, sociology and other cultural subjects, in order that college students who feel drawn toward the profession of education, and even those who are not drawn to it but only tempted to explore the scope and purpose of the educational field, may have during their college course the same opportunity which other students now enjoy, of acquiring a familiarity with the principles and methods of sciences leading up to specific professional training. I believe the university has an extremely important function to perform, no less than the creation of a new profession, a learned profession of education, which shall receive the same social recognition as the three older professions.

This work can never be done by the university, unless the university resigns to the normal school the task of training grade teachers. The standard of our normal schools is already high, in fact there is reason for believing that the curriculum of many normal schools is already overloaded. The failure to recognize and emphasize the real object of normal school training has led us to put before the embryo grade teacher, and through institute lectures and exhortation before the grade teacher in active service who is seeking to improve his or her professional standing, an assortment of ill-digested scientific knowledge and points of view in education which lead not to greater efficiency but to distraction and inefficiency. Why should those of us who consider so minutely the needs of different groups of pupils in the primary grade, not consider with equal minuteness the diverse needs of grade teachers and educators?

To present the situation as I see it today in the field of education, let me turn to the medical profession for an analogy. Medicine is now a term which comprehends a group of sciences some of which are not at all medical, *i. e.* therapeutic, in their intent. Thus bacteriology is a department of botany; anatomy and physiology are biological sciences; physiological chemistry is a branch of chemis-

try; pathology belongs in part to botany and in part to chemistry. These sciences took their origin within the department of medicine, but they would now be maintained on their own account whether medicine endured as a profession or not. Indeed some of the professors in these subjects in our medical schools do not now possess a medical degree. All of these sciences, for example even physiology, were looked upon at one time as medical sciences, a fact which led Lotze as late as 1852, when he came to write his treatise on physiological psychology, to call his work Medical Psychology, although there is not a word in it which has to do with medicine in the narrow sense of therapeutics.

Within recent years the field of education has been so broadened that it comprehends within its boundaries many sciences which are only indirectly related to education in the narrower sense of pedagogical practice and school administration. The modern conception of education as individual development has brought within the scope of education almost the entire science of psychology, and the socialization of the schools is rapidly adding to the list of educational sciences hygiene, sociology, some parts of biology, and even medicine. We are now awaiting a new definition of education, for the scope of education as a university department can not be conceived to include less than all those branches of learning which contribute to our understanding of the helps and hindrances to the normal development of the infant, the child, and the adolescent.

Indeed when we consider that medicine and social service are conducting a campaign involving the education of adults to prevent disease and poverty,—although the education of the adult is often futile where that of the child may be signally effective,—we see there is some support for the contention that the ultimate aim of medicine and social work, *i. e.* happiness and race betterment, and the modern aim of education, *i. e.* normal development and individual efficiency, are practically the same. A group of sciences exists today whose direct purpose is to foster normal development with the ultimate object of race betterment, just as another group of sciences under the caption of medicine, exists for the cure and prevention of disease. What caption will be chosen for this modern group of sciences? Will it be psychology? Will it be sociology? Or will it be education? The science of individual development for which I have proposed the word *orthogenics*, is fundamentally psychological, and one might imagine the coming into existence of a school of psychology or orthogenics paralleling some of our schools of education of today. Moreover, within the field of education psychology will play a part analogous to that which is now played within the field of medicine by anatomy, physiology, and pathology.

Education both in the phase of individual development and in the phase of group instruction, deals with the human mind, and psychology is the science which informs us as to the nature of the human mind, its functions, its growth, and its biological or pathological variations. The student of education must have a wide range of information to be gleaned only within the field of psychology, and in addition, if he is to be a member of a learned profession, he must be trained in scientific method. Psychology is the science to give him the method as well as the information. Despite the way in which the science of psychology bulks large within this field of the new education, I nevertheless believe that the type of work which I am considering will never be subsumed under the caption of psychology. While psychology gives the foundations, education through defining the aim and intent is more likely to furnish the appropriate caption. In some respects sociology, being broader than education and having a conscious intent toward race betterment, suggests itself as the most fitting term of the three. Unfortunately, however, sociology neither possesses a distinctive scientific method of inquiry, nor has it been able to define with exactness its scope of inquiry. Education suffers in the estimation of men of science and the other learned professions, for a similar reason. Strip education of its psychology and its history, and usually we have stripped it of that portion of its content which is based upon sound scientific procedure. One might suppose that no one of these terms could ever be expanded to become sufficiently inclusive to cover the entire field, and that this new department of learning will be styled a school of education, psychology, and sociology. I am convinced, however, from observation of the trend of development within this field, that the term which society will employ to comprehend and to designate this group of sciences, is the term *education*, unless some new term like orthogenics be substituted for it, a substitution I consider most unlikely.

A school of education, that is to say, a department of education in a university or a course in education within the college or graduate school of a university, must therefore comprehend a number of sciences. Some of these sciences have such marked educational intent and application that we may in time come to look upon them as educational sciences, very much as we look upon physiology and pathology as medical sciences. Educational psychology is not what some departments of education would lead us to suppose, a little cream skimmed from the milk of psychology to make tasty the subject matter of pedagogy. Almost all of psychology is educational psychology. Of the thirty-six courses in psychology offered at the University of Pennsylvania, twenty cover work commonly

included within the scope of educational psychology, and only three lie entirely outside this field. Of the remaining thirteen courses, two are introductory courses which must be completed by students of education before proceeding to more advanced work; five of them are in what might properly be considered related fields of knowledge, *i. e.* æsthetics and statistics; four are advanced courses which advanced students of education as well as of psychology might profitably take, especially those who wish a more thoroughgoing training in psychology; and two represent individual laboratory work and a seminar course, both of which might be within the field of educational psychology. At the 1913 summer school of the University of California, every course offered under the caption of education, with the exception of one on modern American education in theory and practice, fell within the field of modern psychology. Although psychology is perhaps the most closely related to education of all the sciences, biology, anthropology, and hygiene must necessarily form a part of the scientific training of any student who would seek to become an expert in the modern educational field. With this end in view, the professional training of the educator requires, like the professional training of the medical practitioner, a four-year graduate course in the various sciences comprehended within the scope of education as I have defined it.

Education in the past has not been a learned profession with a body of expert opinion to which the world pays deference, because those who occupy the positions of authority within the profession have come to fill these positions from the ranks, rising too often only by seniority of service and political preferment. The difference between a real profession of education and what we have had in the past, is just the difference between a professional army and a volunteer army. Officers and privates in a professional army are differently trained, and no one today would consider an army efficient if all the officers had been taken from the ranks. No more important step can be made in upbuilding a modern profession of education, than to recognize that the course of preparation and subsequent training of the grade teacher and of the educator must be made to follow diverse lines.

In comparing the grade teacher to the private in the ranks, I would not be understood to wish to minimize the professional and social value of the grade teacher's functions, nor do I mean to imply that the grade teacher in the daily practice of her profession has nothing more to do than to carry out the orders of the officers of education. I believe a greater measure of freedom in school-room practice very desirable today, but I also believe that one of the causes which prevents the exercise of freedom on the part of the

grade teacher in the classroom is the deficient training of supervisors. When supervisors are provided with adequate information and are inspired by a true scientific spirit, when grade teachers are thoroughly drilled in the technique of educational practice, supervisors and grade teachers working together harmoniously will be able to carry out educational experiments in the classroom which are today impossible, and which will furnish us with real contributions to our knowledge of the relative value of different educational methods. We want grade teachers to have individual initiative and originality, just as in the army we need some private soldiers with initiative and originality. Modern educational treatment and modern warfare are making greater demands upon what may be called the non-commissioned officers of these two professions, and difficult practical problems must often be left to their judgment. I only desire to emphasize that efficiency within the profession of the grade teacher must be based upon training in technique, and not upon dribblings of knowledge from history, literature, and science.

Modern requirements within the medical profession have called into existence within recent times a new branch of this profession —perhaps I had better say a new profession, that of the hospital social worker, who is doing a grade of work requiring the exercise of individual judgment and some ability for research. In connection with such institutions as our Psychological Clinic, the social worker also exercises a function scarcely second in importance to that of the clinicians. Both men and women are required for this work, although women drafted for the service will doubtless always outnumber the men. As the training of this group of social workers requires a thorough grounding in the science of psychology, the Psychological Laboratory and Clinic at the University of Pennsylvania offers courses to college graduates, leading to the Master of Arts degree and requiring a summer's work and one full academic year in the graduate school, as a standard course for the professional training of the social service worker.

Within the field of education also, there is room for a psychologically trained teacher whose professional training should be superimposed upon a four year college course or its equivalent. This expert teacher is the trainer of backward children, not of the feebleminded children who constitute so large a portion of the classes for backward children, but of those backward children who give promise of restoration to the normal grades—the teachers of what I suggest we seek to distinguish as the restoration classes. I believe too, that the Montessori teacher must represent this grade of cultural and professional training. Much more than a three months' course is needed to make a Montessori teacher. Dr. Montes-

sori herself emphasizes the function of her teachers as psychological observers and experts, in contradistinction to their function as instructors. I even venture the assertion that the kindergartner also should represent a similar type of expert trainer.

The proposal to develop a scientifically trained worker within the field of education, *i. e.* the expert teacher or orthogenic trainer, would remain little more than an impractical dream, if we did not have in sight the possibility of a recognition of expert service through an adequate salary and professional rank. This recognition is already manifest in the action of the Board of Education of New York City which went into effect January 1, 1914, placing the teachers of the backward or ungraded classes in that city in the professional rank of eighth grade teachers who receive a higher salary than the teachers of the other grades. These teachers consequently stand in rank just below the high school teacher. The kindergartner, if scientifically trained for her extremely important work, will gain an equal if not superior position.

The city of New Orleans has adopted a procedure which is likely to develop in one and the same person a better equipped kindergartner and special teacher for backward children. The kindergartners of that city are being employed to supplement the work of the grade teachers by giving individual instruction to the backward pupils of the grades. The kindergartner will thus be compelled to acquire orthogenic technique, and a type of expert special teacher will be developed who knows normal children and is familiar with kindergarten methods. The Froebelian philosophy, bad enough in itself but doubly bad when filtered through the mind of an immature girl without scientific training, has hitherto prevented a just appreciation of the kindergartner's contribution to psychology and education. If the reconstructed kindergarten, which many kindergartners are working for with great earnestness, is put upon the same psychological foundation as the Montessori method, the kindergarten can be made the most scientifically conducted portion of the public school system. To achieve this distinction, there will only be required in addition that the kindergartner be adequately equipped through instruction in the facts and methods of modern science to perform her task in a manner to realize this new ideal of the function of the teacher of the pre-elementary grade. The problem of this expert kindergartner, the Montessori teacher, and the restoration teacher is identical. It is the adjustment of the child through individual development to the more formal work of the elementary grades, and the beginner should be taken to the point where he is made ready through initiation into reading, writing, and perhaps arithmetic, as well as through his arrival at a satisfactory stage of mental growth cultivated by

general training, to master the curriculum of the grades. For many reasons, psychological and educational, the kindergarten may serviceably be extended to cover much of the work of the first grade.

As this problem of individual adjustment is primarily a psychological one, the department of psychology at the University of Pennsylvania has organized a course for the professional equipment of expert special teachers or orthogenic trainers. Students will be required to have had a college course or its equivalent, upon which will be superimposed a course planned to cover at least six weeks of a summer school session and a full academic year of graduate work, the amount of work required being enough to give those who may be otherwise qualified a Master of Arts degree. This course is available also for the scientfic training of kindergartners and Montessori teachers.

More than once I have referred to educational experts or clinical psychologists who will undoubtedly find more and more extensive employment in connection with the school system. Their training must be predominantly psychological as that of the educator will naturally be predominantly pedagogical. In 1896 I began tentative work in applied psychology, calling this department of the laboratory of psychology, the Psychological Clinic. It was not until 1907 that I felt sufficiently certain of the methods and scope of the Psychological Clinic to begin the publication of reports concerning its organization and function. Up to 1907 the Psychological Clinic of the University of Pennsylvania remained the only clinic of its kind in existence. Since that time with amazing rapidity psychological clinics, sometimes called educational clinics, have been organized in this country. No more important service can be rendered by our Psychological Laboratory and Clinic, than the maintenance of a high standard of professional training in this important field. A minimum of four years of graduate work in psychology and allied sciences is necessary and will be required for the training of one whom we shall be willing to consider a clinical psychologist.

My thesis is that an equal standard should be erected by our universities as the minimum standard for the adequate training and professional equipment of the educator. That is to say, there should be a four-year graduate course fully equal in difficulty and severity of discipline to a four-year course in medicine, directed to the purpose of training men and women who will find employment as supervising principals, administrative officers, and educational experts. In the college or undergraduate course there should be offered courses in education and the various branches tributary to it, and these should be offered to college students because of the cultural value which they possess, as well as because they will enable

those students who already look forward to the profession of education to prepare themselves in part for this work while still in college. The educational sciences in the college would therefore have the same relation to the professional graduate course in education that college courses in biology bear to the professional course in medicine.

I believe that the definition and scope of education as I have presented them in this paper, must be adopted by our universities if the profession of education is ever to win society's deference to its opinions—a deference which society will pay only to opinions resting upon expert scientific knowledge. Moreover it is only through scientific insight and method that the profession of education can accomplish its present purpose, which I conceive to be the conservation and development of the natural endowments of every child. The orthogenic training of the next generation is the safest and most practicable road to adult efficiency and race betterment. Who will deny the appreciation now enjoyed by the learned professions to those who patiently and scientifically undertake to render this important service to humanity?

BINET-SIMON TESTS OF A THIRTY-NINE MONTHS OLD CHILD.

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As an addition to the growing literature concerning the Binet-Simon tests, and as a further contribution to measuring the efficiency of the scale, the following study of a normal thirty-nine months old child is offered.

The child, B—, is a sweet, winsome little girl, happy of disposition, very loving and lovable, strong and well of body (having had no illness since birth more serious than bowel disturbances and "colds"), keen and bright of mind, quick to comprehend and eager to learn. Until this summer she has had few playmates, losing thereby somewhat of social development but gaining greatly in comparative freedom from interfering cross-currents. At no time have any attempts been made to force her mental development, though there have been studied efforts at making her little games educational in character. At the age of two she was given a Montessori outfit, as an experiment. She quickly learned the simpler plays, as the stairs, cylinders, insets, and color cards. Very early with her dawning intelligence her parents reasoned with her not only as to the *wherefore* of things but also as to the *why* of conduct. This method has greatly stimulated the child's associative faculty, and has bred a habit of weighing and comparing.

In all evaluations of the Binet-Simon tests, due consideration must be given to the child's training and environment. Binet and Simon state that all their norms were determined in those primary schools in Paris which are located in the poorer quarters. It would seem that such norms must be under a normal average—as Binet and Simon tacitly admit. Then, too, the original tests were made but once and by a stranger—all of which conditions must inevitably produce a mean lower than a reasonable average; as, no doubt, investigations among children more fortunately circumstanced and by investigators well known to the children tested will continue to show. It is therefore to be expected that a child who has been the object of much loving attention, and who is tested by her own parents, would probably show a mean considerably higher than the present Binet-Simon standard. It should be added that the

mother of B— was formerly a principal and teacher of six years' experience, and the father is likewise a teacher.

The tests as used on B— were taken from the authorized translation by Clara Harrison Town of the article by Binet and Simon entitled "La Mesure du Developpement de l'Intelligence chez jeunes Enfants" which appeared in the April, 1911, number of the "Bulletin de la Société libre pour l'Étude psychologique de l'Enfant." These 1911 tests differ in several particulars from the tests of 1908, some of the tests of 1908 being advanced, while others are postponed to a later year. It being assumed that the 1911 tests represent a more exact standard as determined by Binet and Simon, that series has been taken for these tests, the results of which follow with running comments. Unless otherwise indicated, the questions are given by F—, the father, and answered by B—, the child.

TEST FOR CHILDREN OF THREE YEARS.—ALPHA.

I. F—"Show me your nose." B—Points to her nose.
F—" " " " eyes." B— " " " eyes.
F—" " " " mouth." B— " " " mouth.

In addition to the above B, on request, points to cheek, chin, forehead, ear, neck, head, elbow, shoulder, arm, forearm, hand, fingers, thumb, body, breast, belly, back, hip, "bottie," thigh, knee, leg, ankle, foot.

II. Repeat two digits.

F—"Say after me: 3–7"	B—says: 3–7
F— " " " 6–4	B— " 6–4
F— " " " 4–9–2	B— " 4–9–2
F— " " " 1–8–5–3	B— " 1–8–5–3
F— " " " 5–8–3–7–4	B— " 5–8–3–7–4
F— " " " 4–7–2–8–5–9	B— " 4–7–2–8–5–9

Repeating three digits, or at the most four, seems to be the Binet-Simon norm for three years.

III. Enumerate objects in a picture. Binet-Simon give three exceedingly poor pictures (see originals). To the first

F—says: "What do you see in this picture?"

B—"Man, wheels, water, snow, sand, rocks, post, church."

This is simple enumeration, but when

F—says: "What is the man doing?"

B—"The man is walking; he is pulling a cart."

The next two pictures in the Binet-Simon test (one, a poverty-stricken couple on a bench in a park; and the other, a prisoner looking out of his cell window) were discarded as being quite foreign to B—'s experience. In their stead were substituted Millet's, "Feed-

ing her Birds," and Millais' "Effie Deans." To the first "Feeding her Birds:"

F—"Tell me about this picture."

B—"Children are playing; and the mother is writing; and the little children are watching her." Interest ceased.

To the next picture, "Effie Deans:"

F—"Tell me about this picture."

B—"There's a dog; and a man; and a lady. They are hugging each other. He has his hand on her—on her arm."

Here she turned her attention to the outer cover of the *Ladies' Home Journal* for January, 1914. "Oh look, Papa, see the little baby." "Yes, dear, what is he doing?" "He is hearing the watch say 'tick.'"

It should be stated that both pictures "Effie Deans" and "Feeding her Birds" were new to B—. Binet and Simon state that "Description is the level of seven years, while response by enumeration corresponds to the level of three years." B—'s responses are certainly descriptive and somewhat interpretative.

IV. Give family name.

F—"What is your name, daughter?"	B—"Bettina Bush."
F—"What is Mother's name?"	B—"Ursula Bush."
F—"What is Father's name?"	B—"Dr. Bush."
F—"What does Aunt B. call papa?"	B—"Arthur Bush."

Additional

F—"Where do you live?"	B—"Right here."
F—"Yes, but where is here?"	B—"Main Street."
F—"Where does Auntie B. live?"	B—"In Athol."
F—"Where does Uncle Cyril live?"	B—"In Boston" (near Boston).

V. Repeat a sentence of six syllables.

F—"Daughter, say after me these words" (from Binet-Simon)

"I am cold and hungry" (6 syllables). B— repeats.

"My name is Gaston * * * Oh, you naughty dog" (10 syllables). B— repeats.

"Let us go for a long walk—Give me the pretty little bonnet" (16 syllables). B— repeats it, with a grin.

Again.

"There is snow in the garden and the little flowers have all gone asleep" (18 syllables). B— repeats, correctly.

Binet-Simon say (p. 19): "A child of three can repeat a sentence of six syllables; it cannot repeat one of ten." Evidently the Binet-Simon three-year test is too young for B— at thirty-nine months.

TEST FOR CHILDREN OF FOUR YEARS.—BETA.

I. Give own sex.

F—"Bettie, are you a little boy or girl?" B—"I a little girl."

II. Name selected objects, consisting of a penknife, a door key, and a copper cent.

F—"What are these?" B—Pointing to each in turn: "A knife, and a key, and a 'penny.'"

III. Repeat three digits.

B— repeats six; see Alpha II.

IV. Compare two lines, one 5 cm., the other 6 cm. in length.

F—"Which of these two lines is the longer?"

B— unhesitatingly places her finger on the 6 cm. Frequent repetitions with variations show no error.

TEST FOR CHILDREN OF FIVE YEARS. GAMMA.

I. Compare two weights.

Binet-Simon use four boxes, similar in appearance and volume and weighing 3, 6, 12, and 15 gms. We used what was available, namely, sets of blocks similar in appearance, measuring 66 x 53 x 4 mm. and weighing 8.25, 11, and 20 gms. B— was asked to pick out the heaviest of the three and then the heavier of the remaining two, this latter requiring appreciation of a difference of less than 3 gms. This test was repeated several times, using different sets of blocks each time, B— responding in every case without error.

II. Copy a square.

This is beyond B— as she has not had any training in the use of a pen, or in fact any instruction in the use of a pencil or crayon. The results show perception of form and approximate size but no ability to guide the pen.

It might be added that B—, quite voluntarily, has learned to thread a darning needle with string and then pass stitches along a given area.

III. Repeat sentence of ten syllables.

B— repeats sentences of 18 syllables; see Alpha V.

IV. Count four pennies.

B— counts quickly and readily up to ten pennies, though apprehension of number is not strong above three, and practically disappears at five; beyond five, numerals represent little more than a fixed regularity of sound sequences.

V. Game of patience with two pieces.

In this test, two rectangular visiting cards, X and Y, are taken. Y is cut on its diagonal, and the two pieces are then so placed that

the hypotenuse of one triangle is at a right angle with that of the other, the 30° angle of one touching the 60° angle of the other. The child is then required to rearrange the cut Y so as to form a figure like X.

B— was indifferent to the game at first; but when directed to cover X with Y did so promptly. The parts of Y were then arranged as at first and B— was again directed to make a figure like X. She did so without hesitation.

TEST FOR CHILDREN OF SIX YEARS.—DELTA.

I. Distinguish between morning and evening.

11.00 A. M.

F—"Is this morning or evening?" B—"Morning."

5.00 P. M. in December, lights on.

F—"Is this morning or evening?" B—"This is night."

Being sceptical as to the child's knowledge on this point, the test was made a considerable number of times, and uncovered one error which was corrected when reference was made to the question of dinner (noon).

II. Definition in terms of use. This is the Binet-Simon series of five questions; all answers verbatim and unprompted.

F—"What is a fork?" B—"It's a fork—something like a fork—it's beside a knife—eats with them."

F—"What is a table?" B—"Well; in the dining-room is a table. It's for dishes and rice. It's for food, don't you know?"

F—"What is a chair?" B—"Well, in the dining-room is a chair. Up here (in the study) is a chair. It's to sit in."

F—"What is a horse?" B—"Well—don't you know what you told me about a horse? Well—on the street is a horse. He looks like a pony. He has to 'get up' so he can go fast. He goes so fast he has to hold the reins. He doesn't run, so the dogs bark. And Mollie doesn't like it, thee knows." (An interesting shift from real life to story-book.)

F—"What is a mama?" B—"Well—a lady is a mama. Ladies cook, thee knows. They wash dishes. She really does dishes and those things."

III. Copy a diamond-shaped figure.

B—'s first attempt is not very successful, but shows improvement over her previous attempt to copy a square.

IV. Count thirteen pennies.

B— did this successfully several times, previous to her third birthday; but in this series of tests she has counted accurately to ten only.

V. Compare faces from the æsthetic point of view.

Binet-Simon give a series of six faces in alternating grouping of homely and insipidly pretty. B— selected the pretty one unhesitatingly.

TEST FOR CHILDREN OF SEVEN YEARS.—EPSILON.

I. Indicate right hand and left ear.

At thirty-nine months B— did not know this. She learned it very promptly when instructed.

II. Describe a picture. For B—'s success, see Alpha III.

III. Execute three commissions on one order. Binet-Simon formula. After repeating the admonition to follow exactly the directions, and in the order given,

F—said: "Now, daughter, take this key and put it on the chair; then go and close that door; then get that box and bring it to me."

With shining eyes and happy face, the three commissions were promptly and accurately performed, though there was noticeable a strong impulse to snatch the nearby box before closing the door; this impulse was repressed, however, and the right sequence of commissions carried out.

IV. Count nine sous, three single and three double.

Not done by B—.

V. Name four colors.

Binet-Simon have chosen four colors: red, blue, green and yellow; and each of these the child is required to name in the order they may be pointed out.

Long before she was three, B— would accurately select and name the following: white, black, gray, tan, violet, blue, green, yellow, orange, pink, brown and red. Her early acquaintance with so many colors is probably due to playing with the color cards of the Montessori outfit, the sixty-four cards of which she could correctly sort and assemble at the age of thirty months.

TEST FOR CHILDREN OF EIGHT YEARS.—ZETA.

I. Compare two remembered objects.

The Binet-Simon tests are too difficult, but

F—"How is your sled different from Dorothy's?"

B—"Well, it's different. Mine is red and Dorothy's is green; and Dorothy's has berries on it."

II. Count from 20 to 0. Too advanced.

III. Indicate omissions in pictures.

Binet-Simon give four pictures. No. 1 has a nose missing; No. 2, an eye; No. 3, a mouth; and No. 4, both arms (though a

child might readily think the arms were folded behind the back). B quickly observed and mentioned the missing features of No. 1, No. 2 and No. 3, even insisting that No. 1, a profile, had but one eye. No. 4 caused no apparent concern, so

F—said: "Could the woman hold a baby?" B—replied: "No-o; she has no hands! But the baby could hold on to her, papa."

IV. Give day and date. Too advanced.

V. Repeat five digits.

B— repeats six; see Alpha II.

Tests for Children of Nine Years.

I. Give change for 20 sous. Too advanced.

II. Define in terms superior to use. Too advanced.

III. Recognize all the pieces of money. Too advanced.

IV. Enumerate the months. Too advanced.

V. Understand easy questions. The three proposed by Binet-Simon are given to show the way a child might answer them.

1. F—"What should we do if we were to miss the train?"
   B—"Run after it."
   F—"But it goes so fast we couldn't catch it."
   B—"Oh, if we run hard we can catch it."
2. F—"What would you do if Dorothy were to hit you without meaning to?"
   B—"I should cry." (She is sensitive to injustice.)
   F—"But Dorothy didn't mean to."
   B—"Then" (laughing gleefully) "I would run after her and hit her." (Evidently conceiving a game like tag, since the idea of being hit without bad intent must imply a game.)
3. F—"What would you do if you broke Dorothy's doll?"
   B—"I would tell her I didn't mean to." (Genuine concern.)

Tests for Children of Ten Years.

These tests are, of course, all too advanced; yet one of them is selected to indicate its relative position. This one is No. 3, and is designated "Criticism of absurd phrases." Binet-Simon quote German alienists as asking this question: "Is the snow red or black?" When this question was propounded to B—, she instantly replied, with some impatience: "The snow is white."

Estimate of B—'s Relative Age, from the Foregoing.

Binet-Simon (p. 60) lay down two rules: (1) "A child has the intelligence of that age all the tests for which he succeeds in passing."

(2) "After determining the age for which a child passes all the tests, a year is added to the intelligence age, if he has succeeded in passing five additional tests belonging to superior age groups; two years are added if he has passed ten such tests, three years if he has passed fifteen, and so on."

B— passes all the tests for a child of four; she also passes four of the five-year level; two of the six-year; three of the seven-year; two of the eight-year, and one of the nine-year—making twelve tests passed in age levels superior to the level passed successfully *in toto*. This would make B—'s age intelligence, at three years and three months, equal to the average Binet-Simon child of six years. No such conclusion, however, seems warranted. It will be recalled that the Binet-Simon standard has been obtained from relatively inferior children, and hence does not fairly represent an average norm. Moreover, the results obtainable by a stranger among several children, and in a limited period of time, can not be placed in the same category with those results obtained leisurely by a parent in the quiet of a home. Again observations made by Decroly and Degand (*Archives de Psychologie*, 9, 1910) of the equivalent tests of the 1908 series show that tests Beta II, Delta II, Delta V, and Epsilon III can all be done by the average middle-class child at the age of three; and Epsilon V at the age of four; also that Alpha IV, Beta I, and Gamma IV depend on training. It might be added that most of the tests depend on training, inasmuch as with but a few weeks training B— could be prepared to pass all the tests up to and including the eight-year level. It would seem, then, that the age-levels of the Binet-Simon standard are at least a year later than a normal average, for how else explain B— attaining the Binet-Simon six-year level, and the criticisms of Decroly-Degand? From these tests of Binet-Simon as applied to B—, and from comparative observations made on children somewhat older, it would seem that B—'s intelligence age was not beyond that of the average child of her station of the age of four and one-half to five. This fact, we would urge, does not so much do credit to B— and her parents, as it works discredit to the parents of the average child. B—'s mental state is in nowise extra-normal or beyond what it should be. She has not been pushed in her work or her play; but her questions have had informative answers, her activities have had educational explanations, and her play has had discretionary guidance. This is every child's right; it is every parent's responsibility.

It is greatly to be desired that a large number of tests among children of the middle class shall be made as a balance to the tests now offered by the Binet-Simon school. From an average of these series a more nearly accurate norm may be established.

A THIRD STUDY OF MENTAL FATIGUE IN RELATION TO THE DAILY SCHOOL PROGRAM.

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During the year 1911–12 the author gave to forty classes in New York City ten-minute tests in the fundamental operations in arithmetic at four different periods of a two-session school day. The results were compared as to quantity and quality in order to suggest the relative efficiency at those periods.[1] In February and March, 1913, twenty-five-minute tests in the fundamental operations were given to sixteen classes in Lynchburg, Va., at two periods of a one-session day, and the results were compared, with conclusions similar to those from the New York tests.[2] The present paper reports an experiment with twelve-minute tests in reasoning problems in arithmetic given to sixteen classes in the Intermediate School in Roanoke, Va., at two periods of a one-session day.

Although rapid computation requires a continued alertness on the part of grammar-grade pupils, which can well be considered indicative of hygienic efficiency for other lines of school work, it must be granted that reasoning problems in arithmetic of similar grade involve processes and effort more generally needed in meeting school requirements. In order to carry out in the third experiment the methods of the other two, it was necessary to use two reasoning tests which could be graded accurately and as approximately equal in difficulty. The tests selected were forms 1 and 3 of the Courtis Standard Test No. 8, since Mr. Courtis had proved by his very wide experience that these tests were as nearly equal as any so far made. They were given and scored according to the Courtis method, the number of examples done and the number right being calculated from the figures in the "answer" column. The non-measurable elements in this gross method were mainly neutralized in the comparison of morning and afternoon work.

On Monday, December 8th, form 2 of test No. 8 was given as a preliminary test to all sixteen classes in order to acquaint them with the matter and method of the succeeding tests; but the papers were

[1]Report published as a monograph: "A Study of Mental Fatigue in Relation to the Daily School Program," 1913. pp. 28.

[2]Report published in The Psychological Clinic, April 15, 1913: "A Second Study of Mental Fatigue in Relation to the Daily School Program."

not scored. By trying ten, fifteen, and twelve minutes as the time limit for this preliminary test, the twelve-minute limit was found to be most suitable for the classes concerned. For the succeeding tests the classes were divided into groups of four, each group containing a 7A, a 7B, a 6A, and a 6B class of equal rank with other classes of the same half-grade. As the classes in a group were tested in rapid succession, about sixty-five minutes were required for a group—from 9:25 to 10:30 in the morning or from 12:50 to 1:55 in the afternoon. The first test was given to Group 1 on Tuesday morning, to Group 2 on Tuesday afternoon, to Group 3 on Wednesday morning, and to Group 4 on Wednesday afternoon. The second test was given to Group 2 on Thursday morning, to Group 1 on Thursday afternoon, to Group 4 on Friday morning, and to Group 1 on Friday afternoon. Thus each class was tested in the morning and in the afternoon; and each test was given in the morning and in the afternoon to the same number of classes of relatively equal rank. By this method the practice effect in the second test was neutralized by approximately equal representation in the morning and in the afternoon results. To complete this neutralization the classes in Groups 1 and 2 were tested in descending order (7A, 7B, 6A, 6B) and the classes in Groups 3 and 4 were tested in ascending order (6B, 6A, 7B, 7A).

A teacher generally remained in the room during a test, but assisted me only in distributing and collecting the papers. The children enjoyed the tests, which they thought were only for correctness and speed. They did not know the time limit for the work; and the few who finished early spent the extra time in looking over their papers. Where children were absent from one test or where they did not follow important directions, their papers were thrown out.

The hygienic conditions in the new school building were unusually good, but there had been no medical inspection of the children. Opening exercises were held in each room from 9:00 to 9:20, recess was given from 12:15 to 12:35, and the first bell for dismissal was rung at 2:15. The only recess did not give much invigoration, because the boys' playground was small, and most of the girls remained indoors in spite of beautiful weather. Some pupils ate a light lunch at recess, but nearly all had dinner at home after school. The departmental system of instruction prevailed throughout, with half-hour recitation periods. All classes included both boys and girls, the total represented in my results being 212 boys and 255 girls. The average age was 14.18 years.

After the papers were scored, the averages of the number of examples done and the number right in the morning and in the afternoon tests were made for each class. Then general averages were

made for the sixteen classes combined, and the morning and the afternoon results were compared. *The number of examples done in the afternoon was 0.68 per cent greater than in the morning; the per cent of examples right in the afternoon was 3.22 per cent less than in the morning.* These percentages are strikingly similar to those from the Lynchburg and New York (average of two afternoon tests) experiments, where the increase in quantity in the afternoon was 1.18 and 1.78 per cent respectively, and the decrease in quality 3.08 and 5.61 per cent respectively. As was shown by the New York results, the decrease in quality would be less by a detailed method of scoring.

The seventh grade showed more relative efficiency in the afternoon than did the sixth grade, probably on account of better discipline in the former. The seventh grade had an increase of 1.61 per cent in quantity in the afternoon and a decrease of 2.82 per cent in quality; the sixth grade had a decrease of 0.04 per cent in quantity and a decrease of 3.67 per cent in quality.

Complete tables of class and general averages were made for the girls and for the boys, showing the greater relative efficiency of the former in the afternoon. The girls had an increase of 1.78 per cent in quantity in the afternoon and a decrease of 2.48 per cent in quality; the boys a decrease of 1.30 per cent in quantity and a decrease of 3.76 per cent in quality.

The practice effect was calculated by re-arranging the class averages according to first or second test rather than according to morning and afternoon, thus neutralizing for the most part the decrease in efficiency in the afternoon. The sixteen classes showed in the second test an average increase of 12.43 per cent in quantity and an average increase of 7.16 per cent in quality. This large practice effect was mainly due to the difficulty the children had at first in disregarding unnecessary figures in some of the examples.

The final conclusion to be drawn from this experiment in Roanoke with reasoning tests in arithmetic, as well as from those in Lynchburg and New York with the fundamental operations, is that normal, healthy children in the grammar grades, in a hygienic school environment, can meet the requirements of the usual daily school program without injury to themselves or their work.

REVIEWS AND CRITICISM.

Backward and Feebleminded Children. By Edmund Burke Huey. Baltimore Warwick and York, 1912. Pp. xiii+221. Illus.

"Years ago at Heidelberg," writes Dr. Huey, "Professor Kraepelin told me, with enthusiasm which I well remember, how much he thought might come from an intensive clinical study of a group of some thirty school children. On my way to Lincoln, Dr. Adolf Meyer encouraged me to undertake some such study in the Illinois institution. The results of a practice try-out of the plan are here before the reader." Thirty-four borderland cases studied in the State School and Colony at Lincoln, Illinois, and one additional case from the Johns Hopkins Dispensary service, are presented clinically by Dr. Huey in chapters III and IV of his book, chapters I and II being taken up with an introduction and a discussion of classification and terminology. He uses the nomenclature which was officially adopted by the American Association for the Study of the Feebleminded in 1910, and which had previously been worked out at Vineland and at Lincoln.

Chapter V deals with "tabulation of data, suggested groups, and lines of transition from feeblemindedness to non-feeblemindedness." Here Dr. Huey describes the tests which were used in studying the children, and tabulates the data obtained. In this connection it is rather a shock to read, "In spite of the fact that a majority of these children have defective vision, only P. S. was wearing glasses when the tests were made, and only D. M., H. E., and G. J. have used glasses while in the institution, as far as could be learned." What is one to think of the management of an institution neglecting to provide for its inmates the necessary glasses, which are so cheap and contribute so much to comfort and efficiency?

Chapter VI contains Dr. Huey's excellent syllabus for the clinical examination of children, including various record blanks and his own modification of Dr. Goddard's version of the Binet scale. Chapter VII discusses the "Mental Functions to be tested and observed." This is followed by a good brief bibliography, an index of cases, and a general index.

A. T.

School Hygiene. By Fletcher B. Dresslar, Ph.D. New York: The Macmillan Co., 1913. Pp. xi + 369. Illus.

Dr. Dresslar, who is now specialist in school hygiene and sanitation for the United States Bureau of Education, was for several years professor of education and dean of the School of Education of the University of Alabama. He is an acknowledged authority, therefore, upon the correlated sciences included under the term which serves as title for his manual, "School Hygiene." His treatment of this very complicated body of fact is simple and untechnical. He says that his book is "not written for the specialist in school hygiene, but for busy teachers, and the author hopes that it will do some small service in convincing them of the great importance of making school life wholesome and healthful, and of instructing the children, directly and indirectly, in matters relating to

hygienic living in school and at home." It seems to the reviewer that Dr. Dresslar has fully succeeded in making his book impressive, and yet not at all forbidding.

In his introductory chapter Dr. Dresslar divides school hygiene into two main divisions. "One division has to do with the physical environment of the child during his school life; the other takes cognizance of the laws of mental hygiene as illustrated by the proper adjustment of the subjects of the curriculum to the mental powers and needs of the children." His sound and comprehensive consideration of the second purpose of school hygiene, *i. e.* the adjustment of the curriculum to mental powers and needs, combined with his thorough discussion of the physical conditions of schoolroom efficiency, makes his book a valuable reference for educational experts, as well as a manual for teachers.

The chapters are conveniently broken up into sections, with paragraph headings which make it easy to find what one is looking for, and each chapter is followed by several topics suggested for study or investigation, and by a short list of selected references. As there are twenty-six chapters altogether, the bibliography thus given represents a fairly complete survey of the related subjects.

A. T.

NEWS AND COMMENT.

First National Conference on Race Betterment.

Four hundred men and women, comprising the first representative group of scientific experts ever gathered in America for that purpose, met in Battle Creek, Michigan, January 8–12, 1914, to assemble evidence of race deterioration and to consider methods of checking the downward trend of mankind. The meeting was known as the First National Conference on Race Betterment. Through the co-operation of the press, the objects and aims of the Conference have been very widely disseminated and a resultant influence for better race ideals is anticipated.

Already the effect of the Conference is apparent in Battle Creek where popular interest in mental and physical efficiency was awakened by a series of public school tests which showed a high percentage of defective children in all grades.

The Conference had its inception in the efforts of four men, particularly interested in race betterment, Rev. Newell Dwight Hillis, pastor of Plymouth Church, Brooklyn, N. Y., Dr. J. H. Kellogg of the Battle Creek Sanitarium, Sir Horace Plunkett, former minister of agriculture for Ireland, and Prof. Irving Fisher of Yale University. At the invitation of a central committee chosen largely by these men, fifty men and women of national prominence in the fields of science and education consented to share in the program. Their addresses together with open discussion of many of the points considered, represented a very wide study of all phases of race degeneracy and the advocacy of many ideas of reform. Some of the suggested methods of race improvement include frequent medical examination of the well, outdoor life, temperance in diet, biologic habits of living, open air schools and playgrounds, the encouragement of rural life, the segregation or sterilization of defectives, the encouragement of eugenic marriages by requiring medical certificates before granting licenses, and the establishing of a eugenics registry for the development of a race of human thoroughbreds.

Among those having a share in the program were:—Rev. Newell Dwight Hillis, Jacob Riis, Judge Ben B. Lindsey, Booker T. Washington, Dr. Victor C. Vaughan, Dr. S. Adolphus Knopf, Dr. C. B. Davenport, Dr. J. N. Hurty, the Very Reverend (Dean) Walter Taylor Sumner and many others of equal prominence.

Some of the interesting statements of the Conference were as follows:—

"In order that the race may survive it will apparently be necessary to make a eugenic selection of healthy mothers and to provide that the cost of bearing and rearing children shall be equally shared by all."—Prof. J. McKeen Cattell, editor *Popular Science Monthly.*

"It will be no easy task to improve the race to the point where there will be no dependent children, but the elimination of the dependent child will be one of the best indices of the superiority of our national stock."—Dr. Gertrude E. Hall, New York State Board of Charities.

Malta Fever Transmitted in Goats' Milk.

Scientists of the Bureau of Animal Industry have compiled a bulletin is of practical interest to physicians, to farmers who raise goats, and to invalids who have been prescribed goats' milk as a diet. Proofs have conclusively established that the transmission of a fever known variously as "Malta," "mountain," "slow typhoid," or by certain other designations, to man is accomplished by the milk of infected goats.

Careful observations in Texas and New Mexico show that the disease has always made its appearance among people connected with goat raising. Entire families have been taken sick with it on goat ranches. The sickness appears usually after the kidding season, during the months of April, May, and June, when the people are in closer contact with the animal. Observations have also shown that just over the border in Mexico goat herders are not nearly so liable to the disease. Conclusions have been drawn that this is not due to any natural immunity but to the fact that the Mexicans always boil the milk before drinking it, while the Americans use it raw.

The general opinion has prevailed that the United States is free from Malta fever and that the disease has only occurred through importations. However, it now seems evident that Malta fever has existed in Texas and New Mexico for at least twenty-five years. The fever takes its name from Great Britain's island in the Mediterranean where the disease has been exceedingly prevalent among British soldiers and sailors. Its occurrence in tropical and subtropical localities has been noted in almost every country. A number of cases have been reported among our soldiers who had just returned from the Philippine Islands.

Pasteurization of infected milk for twenty minutes at 145° F. is sufficient to destroy the organism which transmits the disease. Therefore, milk pasteurized for the destruction of typhoid and tuberculosis germs will also be free from the Malta fever germ.

The symptoms in human beings are usually pronounced and give rise to a more or less severe affection. The most striking symptom is an attack of fever with periods of normal temperature. The duration of these periods varies considerably during the disease. The course of the disease may extend for from six weeks up to a year and cases have even been observed in which relapses have occurred for three years. In human beings the mortality is estimated at 3 per cent.

Cases have been noted in goats that extended over a period of more than a year. Although the disease has no active effect on the animals, its eradication must be considered for public health and it is particularly important since there has been a tendency recently among physicians to advise the drinking of goats' milk for children and invalids.

Annual Convention of Religious Education Association.

The eleventh annual Convention of the Religious Education Association, March 5–8, 1914, is to be given to the single topic of the Relation of Higher Education to the Social Order. Educational experts and well known leaders in the universities and colleges will present the reports on which they have been working for the past year on the efficiency of the colleges in preparing young people for the more exacting demands of modern social living. The interest of the convention centers in the question whether the colleges are consciously training for the more complex civilization in which their graduates must live and serve and especially whether these institutions succeed in developing moral competency and leading to a religious interpretation of life. Four days will be devoted to this study and one and a half days to the problems of instruction in religion in the churches and Sunday Schools. The meetings will be held in New Haven where the convention will be the guest of Yale University.

An especially notable array of speakers will address the evening meetings in Woolsey Hall. Among the speakers are, John R. Mott; President A. Gandier, of Knox College, Toronto; Charles S. Whitman, District Attorney of New York; Governor Simeon Baldwin, of Connecticut; President William De Witt Hyde; President Samuel A. Eliot; Rabbi Stephen S. Wise, of New York, and Ex-president Taft. Programs may be obtained from the Religious Education Association, Chicago, and all persons interested are invited to attend the convention.

Dr. Edmund B. Huey died December 30, 1913.

We learn with deep regret of the death at Connell, Washington, on December 30, 1913, of Dr. Edmund Burke Huey. Born December 1, 1870, Dr. Huey took his A.B. degree at Lafayette in 1895 and his Ph.D. degree at Clark University in 1899. During the academic year 1901–02 he studied at Berlin and Paris. He was professor of psychology and education in the University of Pittsburgh from 1904 to 1908. After spending the years 1909–11 as resident psychologist in the Lincoln State School and Colony, Lincoln, Ill., he engaged in psychoclinical investigation at the Johns Hopkins Dispensary as Fellow by Courtesy in psychology and education, 1910–11, and assistant in psychiatry and lecturer on mental development, 1911–12. In 1912 his failing health led him to the Pacific Coast.

Dr. Huey's early death is the more to be regretted because he had already accomplished valuable scientific work of a pioneer character, and it was to be expected that his continued labors would have added measurably to our knowledge in the field of applied psychology. He was the author of several books, among them being "The Psychology and Pedagogy of Reading" (1909), and "Backward and Feebleminded Children" (1912). The latter book, which is reviewed on page 261 of this issue, is one of the most important of the current contributions to clinical psychology.

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For the normal development of every child

PSYCHOLOGY HYGIENE EDUCATION

Editor: LIGHTNER WITMER, Ph. D., University of Pennsylvania

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Subscription $2.50. 600 pages annually. Founded 1910.
Monthly (10 numbers). Managing Editor, J. Carleton Bell.
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